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ABSTRACT

Program goals of Project CHOICE were evaluated in terms of their ability to develop procedures to identify educational, family, and racial barriers to fulfillment of potential in sophomore girls, to design and use strategies for removing internalized and institutional barriers, and to be validated as effective intervention measures. Results of the program outcomes indicated that: (1) talent identification is feasible, particularly for large high schools, through use of the Talent Inventory and Rating Sheet: (2) in all socioeconomic sectors parents demonstrate a growing receptivity to career education: (3) social context is a powerful determinant of talent manifestation: (4) talented young women tend to be multiply talented: (5) critical differentiating features appear to lie in the value domain but not as a function of school control per se: and (6) individual and school differences seem to be far more prepotent for pinpointing career guidance needs than are family background factors per se. There is an underlying need of female adolescents, particularly among the affluent, to express their independence from their parents. Extensive data tables are appended. (Author/HLM)

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Final Report

REALIZING THE PROMISE OF FEMALE ADOLESCENTS: A DIAGNOSTIC-PRESCRIPTIVE MODEL

(September 1, 1976 - November 30, 1978)

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February 28, 1979

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PROJECT CHOICE

CREATING HER OPTIONS IN CAREER EXPLORATION

U.S. Department of Health, Education, and Welfare
Office of Education

Foreward

The report which follows represents the combined effort of a large number of dedicated individuals who manifested, in a wide variety of ways, their commitment to helping talented young women realize their potential in a world that is just beginning to recognize the costs of its historical oversight. We are indebted to all who contributed to the important central purpose: the busy young women, their parents, counselors, and school administrators who believed in what it was that we were trying to do.

The description contained herein traces all of the many tasks associated with program development, implementation, and validation resulting in the production of the Project Choice manual. It includes as well the results of very extensive data analyses undergirding research and evaluation phases and as such in the interest of brevity provides, in summary form only, the voluminous statistical analyses actually undertaken.

A large staff was required to collect, code, verify, and analyze all of the information: Drs. Ruth Hervatin, Diana Kahn, Elisabeth Plax, and Ms. Mary Parran; Doctoral candidates Valerie George and Jane Moore; and Technical Assistants Barbara Borsodi, Anne Curran, Ken Godin, Carolyn Gold, Gary Hoogenboom, Mary Kliszczuk, Julie Madonia, Nancy Merrill, Elizabeth Miller, Christopher Miller, and Anat Tamir. The Project was blessed with superb statistical consultants both in Cleveland and in Ann Arbor -- Dr. Claudia Colton during 1977, Dr. Mark Krell and Ken Guire (University of Michigan) for the entire duration of the Project. They graciously worked with us nights and weekends on the computer and entertained phone calls of puzzlement at all hours of the day and night.

The quality of secretarial assistance has relieved us of so many burdens that we can scarcely begin an appropriate expression of our gratitude to Anne Miller and Subhash Sharma. Of immeasurable assistance has been the support services and consultative opportunities, formal and informal, provided by the Women's Program staff under Dr. Joan Duval, and particularly the thoughtfulness of our Program Officer, Ms. Doris Shakin.

Lastly, the incredibly devoted and extraordinarily competent skills of Dr. Constance Hollinger in setting up all of the complex data management procedures, supervising their careful completion, and coaxing the computer terminal to spew forth its output can never be adequately described nor properly acknowledged. We hope that our gratitude and admiration is at least partially known. But not least, Dr. David Fleming who has cheerfully lived in a house with wall-to-wall computer print-out, tolerated disruption and distraction with great good humor, and materially contributed to the career development of the senior author entirely in keeping with the Project Choice objectives.

E.S.F.

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Introduction

In response to documented need, Project Choice sought to develop and validate a diagnostic-prescriptive model program for the provision of special services to broaden the career options for adolescent women. Intended for utilization by guidance personnel, the model focused upon adolescent women representing a diverse range of talents and abilities, cultural backgrounds, and individual characteristics from urban co-educational public, all girl parochial, and independent schools. Under OE Grant #G007604971 for Fiscal Years 1976-77 and 1977-78, Project Choice sought to test the assumption that barriers to educational equity for women can be differentially diagnosed for high school women with diverse ranges of talent and that strategies for overcoming these barriers can be uniquely designed in terms of those identified needs.

The report contained herein describes the procedures undertaken to attain the aforementioned objectives and the resulting outcomes. The model program (presently under review) is available in handbook form entitled Project Choice: Creating Her Options in Career Exploration. It describes the program in specific detail including procedures for identifying potential participants, session by session directions, workshop components, hand-out materials and evaluation processes.

The three objectives projected for attainment by Project Choice were:

1. To develop procedures for identifying the kinds of barriers that may be predicted to interfere with the fulfillment of the potential of talented sophomore girls in a variety of settings: from public co-ed, independent, and parochial schools and from diverse racial and family backgrounds.

2. To design and use strategies for removing those internalized and institutional barriers.

3. To validate the effectiveness of the interventions.

The sequence of steps undertaken to accomplish each objective and the results thereby attained will be presented in order throughout the remainder of this document.

Objective I. Procedures for Identifying Internal and External Barriers to the Fulfillment of the Potential of Talented High School Women.

The project staff successfully completed the ten tasks required by Objective I as originally set forth in the revised timeline of the project proposal. These accomplishments with modifications and revisions as necessitated by unanticipated events and institutional constraints are presented below.

Task 1: To develop screening materials to be used in the identification of talented and gifted adolescents.

Consonant with the belief that adolescent women may demonstrate talent or giftedness not typically recognized by traditional definitions of giftedness, project staff developed a talent inventory designed to assess talent in eight non-academic areas as well as in eight traditional areas. Using the talent inventory in conjunction with existing school records of academic aptitude and achievement, the staff developed an eighteen dimension talent profile sheet with operationalized criteria for the rating of each dimension (see Appendix A).

Task 2: To train and provide assistance to school personnel in screening procedures.

As noted in the first quarterly report, demands on counselor time as well as the developmental state of the talent inventory itself necessitated modification of this task. The talent inventory was presented to the counselors for their review and suggestions for modification. However, the actual screening of approximately 1,100 sophomore students required a time commitment which exceeded the amount of time which could be expected of the guidance counselors given their regular professional demands. As a result, all talent inventories and school records were coded for anonymity, in accordance with the Family Privacy Act, and were screened "blind" by the Project Director and Project Manager.

Table 1 shows the distribution of sophomore women screened within the public, independent, and parochial cooperating schools.

Task 3: To inform and obtain consent from parents of students identified in the screening process.

At the conclusion of the screening process, the code numbers of students who were selected for program participation were returned to the counselors in order to obtain the names and addresses of selected program participants. The students and their parents were sent information regarding the nature of the program, a parent consent form, and a stamped envelop for returning the consent form. Of the 335 invited to participate in the program, 291 agreed to participate.

Table 1

Distribution of Participating Schools by
Total Population and Sophomore Women

School	Total Population	Sophomore Women
Parochial I	870	215
Parochial II	450	150
Private I	480	56
Private II	275	48
Public I	2,700	450
Public II	1,800	300

Table 2 shows the responses of the eligible families to the invitation to participate in Project Choice.

Task 4: To revise the diagnostic battery.

Project staff reviewed numerous instruments for the assessment of each identified variable. Each instrument was evaluated in terms of its validity, reliability, age appropriateness, possible sex-bias, and future utility in program development. The ultimate criterion was that of required administration time. Given the number of variables to be assessed and the pre-existing demands on student time, several otherwise attractive instruments were excluded in favor of comparable instruments requiring less time for administration.

The diagnostic battery included a project designed interview schedule to assess background factors, parental and student aspirations, perceptions of external barriers, and role model availability. The Helmreich-Stapp-Ervin Texas Social Behavior Inventory, measuring social self esteem; the Helmreich-Spence Personal Attributes Questionnaire with Masculine, Feminine, Masculinity-Femininity scales; the Spence-Helmreich-Stapp Work and Family Orientation scales of Mastery, Competitiveness, Work Orientation, and Personal Unconcern; the Holland Self Directed Search; and three projective cues for assessing Fear of Success (Horner, 1970) completed the battery.

Task 5: To schedule time for administration of the diagnostic battery.

In cooperation with school personnel, project staff established a schedule for administration of the diagnostic battery and notified those students who had agreed to participate. Testing was conducted at each of the six participating schools. In addition, a special testing session was held at the university for those students who were unable to attend the originally scheduled session at their schools.

Task 6: To administer the diagnostic battery.

To insure consistency of testing climate and procedures, the Project Director and Project Manager conducted all testing sessions with the assistance of other staff members.

Task 7: To score and analyze the diagnostic data.

Project staff scored and coded all available data from the talent inventory, the school records, and the diagnostic battery. Approximately 19,000 data cards were punched, transcribed to magnetic tape and entered into the active file of the computer center at the University of Michigan, the closest computer that could accommodate the 842 phase I

variables identified in the project codebook. Preliminary distributions and analyses relevant to the development of the diagnostic-prescriptive model were conducted. Given the time constraints, these analyses were conducted on data that had not been double coded. Therefore, project staff returned to the data and began the process of double coding and reconciling so that the final data-bank would be as consistent and error free as possible.

Task 8: To develop individual diagnostic profiles.

From all available information, the Project Director and Project Manager developed individual diagnostic profiles for all talented participating students. Each profile reflected: 1) the degree to which one or more of the previously identified internal barriers existed 2) the degree to which various external barriers were in evidence and 3) the degree of realism and crystallization reflected in the student's educational and career aspirations.

Task 9: To select a sample of talented and gifted students for participation in the career development program.

To comply with the expressed wishes of the school administrators and staff, the selection of program participants had to occur prior to the diagnostic testing so as to avoid setting into motion any false hopes or expectations among students who did not meet the established criteria for talent and giftedness. As a result, only those students who had been identified as talented and gifted participated in the diagnostic testing. Although this alteration did not change either the scope or the objectives of the project, it should be noted that Task 9 was completed earlier on the timeline than had been originally anticipated.

Task 10: To identify subgroups existing within the selected sample.

Using the diagnostic profiles, the Project Director and Project Manager identified subgroups of students who evidenced common profiles with regard to the internal barrier dimension. Although subgroups could have been developed along any one of three other diagnostic dimensions, it was decided that the internal barrier dimension was the most salient dimension for emphasis in a career development program designed to enable women to realize their career potential.

Table 2

Parental Response to Letter of Invitation
by School

School	No. of letters sent	No. of Acceptances	%	No. of Refusals	%	No. of No Response	%
Parochial I	67	58	86.6	2	3.0	7	10.5
Parochial II	40	37	92.5	1	2.5	2	5.0
Private I	24	21	87.5	1	4.2	2	8.3
Private II	18	14	77.8	1	5.6	3	16.7
Public I	91	76	83.5	0	0	15	16.3
Public II	95	85	89.5	1	1.1	9	9.4
Total	335	291	86.9	6	1.5	38	11.3

Results of Data Analyses for Objective I.

Talent Distributions

The project proposal indicated that a research data base consisting of the demographic, personal attributes and talent characteristics of adolescent women would constitute an outcome of the undertaking. The talent survey undertaken in the six participating high schools yielded distributions on 17 talent dimensions for 1,141 sophomore women. As a function of available information, each sophomore woman was given a rating from 0 to 5 based upon specific criteria (see Appendix A) on each of 17 talent dimensions: General Ability IQ (Aptitude A); Differential Aptitude Factors (Aptitude B); Achievement on Standardized English, Math, and Science tests; Grades in English, Math, and Science; as well as ratings on Leadership, Home Related Activities, Athletics, Community Involvement, Employment, Literary Activities, Visual Arts, Co-Curricular Academic Activities (Debate Club, Math Club, etc.), and Performing Arts. Table 3 shows the number, the mean, standard deviation, skewness and kurtosis for the 1,141 sophomores for whom data were available in each category. These data provide a general context within which to interpret the relative performances of those later selected as talented in each area. It may be noted that because of school differences, students could not be rated on all dimensions, e.g. science achievement tests or general intelligence measures were not administered or the student was not enrolled in a science course at the time of screening.

The population of high school sophomores represent a rather highly selected group of students as a function of entrance requirements imposed by the two parochial and two independent schools and the socio-economic status levels and high community educational standards of the two public schools. This becomes apparent in the aptitude and achievement test

Table 3

Distributions of Talent Dimension Ratings for Total Sophomore Population

Talent Dimension	N	Mean	Std. Dev.	Skewness	Kurtosis
General Aptitude	329	3.3739	.95160	-.316	-.162
Differential Aptitude	628	3.2771	1.2099	-.083	-.974
Achievement English	876	3.2945	1.2676	-.171	-.985
Achievement Math	872	3.2099	1.2985	-.110	-1.031
Achievement Science	459	3.0501	1.2658	-.036	-.997
English Grade	965	2.8322	1.3022	.406	-.783
Math Grade	945	2.9164	1.3476	.396	-.890
Science Grade	707	2.9321	1.3139	.395	-.948
Leadership	1141	.33567	.78831	2.631	6.967
Home Related	1141	.76599	.89272	1.134	1.089
Athletics	1141	1.1472	1.1889	.814	-.198
Community	1141	.73089	.98907	1.325	1.472
Employment	1141	.98861	1.1512	1.033	.357
Literary	1141	.40403	.75785	2.601	8.669
Visual Arts	1141	.57493	.89091	1.825	3.373
Co-Curricular	1141	.38037	.77172	2.586	7.827
Performing Arts	1141	.79316	1.2064	1.559	1.664

dimensions where slight negative skewness occurs and indicates above average functioning. In contrast the mean grades fall below the B level which reflect general high academic standards obtaining in these schools. The positively skewed non-academic talent dimensions rated on the basis of self-reported activities demonstrate the extremely rigorous standards utilized by project staff. Viewed against absolute criteria, for example, there were far fewer nationally and statewide published writers than nationally and statewide recognized athletes.

Students were designated as talented on a given dimension if they received a rating of 4 or 5 on that category. Thus by selecting all 4's and 5's on each dimension, it was possible to compare their relative standings on all other talent dimensions. It must be noted that many students were multi-talented and therefore were included in more than one of the comparisons. Table 4 provides a summary of the mean ratings of each of the talented groups on all other talent dimensions as compared with the total population from which they were drawn. The reader is reminded that data were not always available on all students for every dimension.

In examining those students rated 4 or 5 on all talent dimensions against each other and the total population, certain patterns will be observed. It must be noted that the talent categories are overlapping, i.e. multiply talented students will be tabulated on each dimension of their excellence. Thus, the same individual may have received a 4 or 5 rating on Aptitude B, English Grade and Achievement, Literary Accomplishment, and Athletics. Table 5 provides a clearer sense of the multiple talent phenomenon wherein almost 50 percent of the students had four or more talents each. Whereas excellence in academic areas inflates the number of talents per student such that a high ability student with A grades in

Table 4

Summary of Four and Five Rated Talented on Each Dimension with Their Relative Standing on All Other Dimensions Against Population Norms

Talent Dimension	Total Pop. (N = 1141)	Gen. Apt. (N = 154)	Diff. Apt. (N = 268)	Ach. Eng. (N = 381)	Ach. Math (N = 353)	Ach. Sci. (N = 172)
Gen. Apt. (S.D.)	3.37 (.95)	4.22 (.42)	4.09 (.68)	4.01 (.69)	3.98 (.74)	4.08 (.61)
Diff. Apt.	3.28 (1.21)	3.72 (1.12)	4.48 (.50)	4.16 (.92)	4.23 (.89)	4.25 (.90)
Ach. Eng.	3.29 (1.27)	4.16 (.89)	4.21 (.88)	4.53 (.50)	4.13 (.32)	4.51 (.73)
Ach. Math	3.21 (1.30)	3.87 (1.14)	4.17 (.93)	4.05 (.99)	4.55 (.50)	4.35 (.81)
Ach. Sci.	3.05 (1.27)	3.73 (1.15)	4.11 (.82)	3.89 (.97)	3.90 (.98)	4.42 (.49)
Eng. Grades	2.89 (1.30)	3.61 (1.14)	3.63 (1.22)	3.67 (1.16)	3.69 (1.19)	3.81 (1.22)
Math Grades	2.92 (1.35)	3.25 (1.29)	3.53 (1.22)	3.42 (1.25)	3.58 (1.24)	3.31 (1.23)
Sci. Grades	2.93 (1.31)	3.25 (1.31)	3.66 (1.19)	3.51 (1.24)	3.60 (1.22)	3.80 (1.27)
Leadership	.34 (.79)	.70 (1.08)	.49 (.89)	.49 (.90)	.54 (.96)	.42 (.82)
Home Related	.77 (.89)	.89 (.92)	.91 (.93)	.88 (.94)	.91 (.93)	.80 (.87)
Athletics	1.15 (1.19)	2.04 (1.42)	1.47 (1.19)	1.50 (1.25)	1.56 (1.28)	1.39 (1.25)
Community	.73 (.99)	1.03 (1.18)	1.12 (1.07)	1.04 (1.12)	1.04 (1.09)	.89 (1.12)
Employment	.99 (1.15)	1.34 (1.15)	1.19 (1.12)	1.25 (1.15)	1.26 (1.11)	1.23 (1.12)
Literary	.40 (.76)	.84 (1.12)	.51 (.84)	.59 (.92)	.56 (.89)	.45 (.87)
Visual Arts	.57 (.89)	.85 (1.11)	.83 (.99)	.78 (1.03)	.77 (1.02)	.81 (1.07)
Co-Curricular	.38 (.77)	.86 (1.15)	.57 (.97)	.57 (.95)	.59 (.98)	.40 (.78)
Performing Arts	.79 (1.21)	1.82 (1.53)	1.04 (1.27)	1.33 (1.48)	1.26 (1.44)	1.35 (1.60)

Table 4 (cont.)

Talent Dimension	Eng. Grade (N = 255)	Math Grade (N = 263)	Sci. Grades (N = 212)	Leader-ship (N = 13)	Home Related (N = 15)	Athletics (N = 49)
General Aptitude	3.98 (.80)	3.82 (.91)	4.00 (.82)	3.40 (.89)	3.20 (.84)	4.09 (.67)
Differ. Aptitude	4.29 (.88)	4.01 (.95)	4.19 (.93)	3.71 (.76)	3.38 (1.30)	3.93 (1.07)
Achieve. Eng.	4.27 (.94)	3.91 (1.08)	4.18 (.94)	3.00 (1.13)	3.00 (1.41)	3.77 (1.11)
Achieve. Math	4.18 (.90)	3.99 (1.07)	4.06 (1.05)	3.17 (1.47)	3.00 (1.30)	3.74 (1.13)
Achieve. Sci.	3.94 (1.01)	3.54 (1.19)	3.91 (1.07)	2.00 (.89)	2.60 (1.82)	3.35 (1.31)
Eng. Grades	4.64 (.48)	3.76 (1.12)	4.10 (.96)	2.62 (1.26)	3.13 (1.30)	3.29 (1.11)
Math Grades	3.89 (1.15)	4.66 (.47)	3.91 (1.16)	3.00 (1.15)	3.00 (1.36)	3.38 (1.21)
Sci. Grades	4.00 (1.05)	3.69 (1.15)	4.61 (.49)	2.89 (1.62)	2.55 (1.37)	3.39 (1.30)
Leadership	.55 (.97)	.46 (.89)	.59 (.99)	4.08 (.28)	.60 (.99)	1.00 (1.14)
Home Related	.99 (.96)	.97 (.89)	.98 (.89)	.77 (.93)	4.00	1.04 (1.19)
Athletics	1.56 (1.27)	1.54 (1.18)	1.60 (1.27)	2.23 (1.36)	1.67 (1.50)	4.10 (.31)
Community	1.07 (1.07)	1.12 (.99)	1.17 (1.03)	1.85 (1.21)	1.13 (1.19)	1.24 (1.32)
Employment	1.26 (1.14)	1.24 (1.14)	1.25 (1.06)	1.46 (1.56)	1.87 (1.30)	1.33 (1.26)
Literary	.67 (1.00)	.56 (.88)	.56 (.98)	1.15 (1.77)	.73 (.88)	.55 (.84)
Visual Arts	.82 (1.08)	.77 (.99)	.78 (1.05)	.46 (.66)	1.13 (1.13)	1.02 (1.15)
Co-Curricular	.81 (1.15)	.73 (1.04)	.76 (1.13)	1.08 (1.19)	.93 (1.16)	1.00 (1.19)
Performing Arts	1.43 (1.47)	1.03 (1.25)	1.33 (1.42)	1.62 (1.71)	1.00 (1.51)	1.57 (1.44)

Table 4 (cont.)

Talent Dimension	Community (N = 22)	Employment (N = 39)	Literary (N = 12)	Vis. Arts (N = 19)	Co-Curric. (N = 12)	Perf. Arts (N = 55)
General Aptitude	4.13 (.64)	4.00 (.58)	4.14 (.38)	3.55 (.52)	4.50 (.53)	3.79 (.84)
Differ. Aptitude	3.85 (.69)	2.97 (1.10)	4.67 (.58)	4.67 (.82)	4.43 (.53)	4.39 (.78)
Achieve. Eng.	4.21 (1.18)	3.35 (1.20)	3.91 (1.04)	4.13 (.92)	4.50 (.80)	4.30 (.99)
Achieve. Math	3.79 (1.08)	3.24 (1.12)	3.45 (1.57)	3.87 (.99)	4.58 (.67)	3.91 (1.13)
Achieve. Sci.	3.64 (.92)	2.89 (1.45)	3.67 (1.21)	3.33 (1.07)	5.00	3.56 (1.25)
Eng. Grades	3.23 (1.51)	2.87 (1.09)	3.67 (1.30)	3.63 (1.16)	4.67 (.49)	3.74 (1.14)
Math Grades	2.85 (1.35)	3.16 (1.24)	3.08 (1.44)	3.16 (1.39)	4.33 (1.07)	3.09 (1.17)
Sci. Grades	3.00 (1.53)	3.00 (1.05)	3.89 (1.27)	3.13 (1.50)	4.89 (.33)	3.33 (1.40)
Leadership	1.32 (1.25)	.64 (1.04)	1.67 (1.83)	.26 (.65)	1.67 (1.37)	.78 (1.26)
Home Related	1.18 (1.10)	1.15 (1.16)	.75 (.97)	.89 (1.05)	.92 (.90)	.76 (1.04)
Athletics	1.68 (1.67)	1.87 (1.20)	2.17 (1.11)	1.84 (1.50)	2.83 (.83)	1.53 (1.46)
Community	4.14 (.35)	.90 (1.12)	1.[illegible] (1.35)	1.11 (1.24)	1.17 (1.19)	1.[illegible] (1.36)
Employment	1.36 (1.14)	4.18 (.39)	1.08 (.79)	1.42 (.96)	1.58 (1.24)	.93 (1.00)
Literary	.59 (.85)	.62 (.71)	4.33 (.49)	.47 (.96)	1.42 (1.73)	.71 (1.20)
Visual Arts	.64 (1.22)	.82 (.91)	.58 (1.00)	4.05 (.23)	.92 (1.51)	.58 (.98)
Co-Curricular	.82 (.96)	.62 (.81)	1.75 (1.60)	.37 (.96)	4.25 (.45)	.58 (.98)
Performing Arts	2.32 (1.52)	.74 (1.02)	1.83 (1.64)	1.32 (1.49)	2.25 (1.06)	4.27 (.45)

Table 5

Frequencies and Percentages of Multiple Talents by School

School	N	Number of Talents								
		1	2	3	4	5	6	7	8	9
I	138	37	19	17	17	22	21	4	1	0
%	21.1	26.8	13.8	12.3	12.3	15.9	15.2	2.9	.70	0
II	49	9	7	7	5	5	2	9	2	3
%	7.5	18.4	14.3	14.3	10.2	10.2	4.1	18.4	4.1	6.1
III	61	22	19	12	5	1	2	0	0	0
%	9.3	36.1	31.2	19.7	8.2	1.6	3.3	0	0	0
IV	35	7	4	7	4	6	2	5	0	0
%	5.3	20	11.4	20	11.4	17.1	5.7	14.3	0	0
V	211	41	30	29	39	28	27	15	2	0
%	32.2	19.4	14.2	13.7	18.5	13.3	12.8	7.1	1	0
VI	161	37	24	24	18	17	19	17	4	1
%	24.6	23.0	14.9	14.9	11.2	10.6	11.8	10.6	2.5	.6
Total	655	153	103	96	88	79	73	50	9	4
%		23.4	15.7	14.7	13.4	12.1	11.2	7.6	1.4	.6

math and science would be counted three times for academic accomplishments alone, nonetheless the range of talents is impressive as are differences among the schools. The average number of talents for all those students with one or more talents was actually 3.5 but there were 13 students with eight or nine excellent ratings. It is interesting to note that while school control was not particularly a differentiating factor, there was one parochial school of lower socioeconomic status where students tended to concentrate at the lower end of the distribution. One independent school showed higher concentrations at the upper end of the distribution. This suggests that economic resources may play a critical role in permitting the exploration of a broad range of activities and thus may restrict the possibilities for those potentially talented who come from less fortunate economic circumstances.

With few exceptions, the talented groups exceed the population norms not only in the target area by definition but also on all other dimensions. Thus, those chosen for talent in math achievement also surpass the norm group on all other dimensions: athletics, leadership, community involvement, etc. This holds consistently for all the academic talent groupings. In the non-academic talent groups, however, variability was noted with the talented often falling below the population mean in areas other than their own specialty. Only the 4 and 5 athletes and co-curricular talented were consistently above the population means whereas the leaders fell below on 7 dimensions, the home related below on 5, the employment group on 3, the visual and performing arts on 2, and the community and literary on 1 each.

An examination of relationships among the talent groups reveals that contrary to the expectation that each talent group would have the highest mean score on its own dimension, such was not always the case. Except for the English Achievement group and the Math Grade group, six of the eight

academic groups were not highest on their own dimension. The co-curricular talent group exceeded the mean scores of those selected as talented in general aptitude, math and science achievement and English and Science grades. The literary and visual arts groups had higher differential aptitude scores than those specifically chosen on that dimension. What is being tapped are clearly much more highly selective groups (N ranges from 12-29) in the specialized areas of co-curricular, visual arts and literary abilities.

On the non-academic dimensions, on the other hand, the rigorous criteria are validated by the finding that each talent dimension group has the highest mean rating for that category. Thus the leaders with a mean rating of 4.08 receive the highest score on that dimension of any group. Except for the community and home related areas, the second highest ratings consistently fell in the athletic dimension. This would suggest, as it parallels the general population, a growing tendency for sports participation and physical fitness to characterize the major activities of young women of the late 1970's. In contrast it should be noted that 9 of the 17 talent groupings demonstrated their lowest rating in the leadership area.

These inter-relationships may be more clearly understood through the correlation matrix for the entire population (Table 6) where ratings for non-academic areas were entered ranging from 0 to 5, i.e. no talent indicated to the highest possible rating. It will be noted that aptitude measures, science achievement test scores, and science grade are not entered since they were not available for all students as a function of variation in school testing programs and curricular offerings.

Table 6

Correlation Matrix for Talent Dimensions on Total Population

Variable													
846. Ach. Eng.	1.0000												
847. Ach. Math	.6796	1.0000											
849. Grade Eng.	.5786	.5554	1.0000										
850. Grade Math	.3571	.4234	.4737	1.0000									
853. Lead.	.1353	.1435	.1034	.0287	1.0000								
854. Home Rel.	-.0164	.0194	.0746	.0729	.0754	1.0000							
855. Ath.	.1398	.1690	.1435	.1009	.2924	.0680	1.0000						
856. Comm. Inv.	.1287	.1223	.1191	.1017	.3148	.1163	.1423	1.0000					
857. Employ.	.0758	.1104	.0403	.0446	.1454	.1612	.1616	.1225	1.0000				
858. Literary	.1582	.0697	.1398	.0438	.1726	.0832	.1408	.1088	.0643	1.0000			
859. Vis. Art	.1461	.0854	.1188	.0830	-.0297	.0994	.0784	.0926	.0165	.1026	1.0000		
860. Co-curricular	.1735	.1661	.2594	.2010	.3121	.1423	.2974	.1560	.1134	.2935	.0486	1.0000	
861. Perf. Art	.2833	.2125	.2584	.0631	.1553	-.0309	.1387	.1245	-.0122	.1304	.0399	.1520	1.0000
	846. Ach. Eng.	847. Ach. Math	849. Grade Eng	850. Grade Math	853. Lead	854. Home Rel.	855. Ath.	856. Comm. Inv.	857. Employ	858. Literary	859. Vis. Art	860. Academic	861. Perf. Art

Note: N = 847
Level .05 <.07
Level .01 <.09

For those groupings where data is available, however, the co-curricular and performing arts talented appear to relate the most strongly to the academic areas. The high relationships among the academic areas are, of course, in accordance with expectations based upon previous research. In contrast, the home related and employment areas have the weakest relationships to the academic dimensions. The absence of relationships between employment and areas of activity demanding after school time provides evidence for the validity of the employment category. The more individualistic and less social character of the visual arts is corroborated by the lack of relationship of their talent to the leadership, co-curricular and performing arts areas. The earlier observations about the unique characteristics of the co-curricular talented is clearly evident when examining the strong relationships among their talent ratings in the matrix. The similarities between the leaders and the co-curricular talented are striking with the notable difference in the literary and grades in math areas where there was weak association with the co-curricular group.

Characteristics of Talented Program Cohort

As will be recalled, constraints imposed by the Family Privacy Act and the schools themselves restricted information gathering to those talented invitees who agreed to participate. Attrition was actually very low permitting testing to proceed for 291 of the 335 invitees or 87 percent of those originally selected. (See Table 2.) Those students invited to participate were selected on the basis of a judgment regarding the potential of the program to provide needed services to them. Thus for example one extraordinarily talented musician with clear career goals and well thought through back-up alternatives to her aspiration for becoming a symphony conductor was not in fact included. While the original proposal had

specified an upward limit of 260 students, this number was increased as a function of the overwhelmingly enthusiastic responses of the invitees.

General Demographic Descriptions

Presentation of program data requires that a context be provided for maximum understanding. Therefore it becomes important to describe the program cohort of talented women first in general terms. More specific characteristics by school will follow.

The original talented sample consisted of 85.5% white, 13.2% Black, 1% Oriental and .3% Hispanic young women. A very high percentage, 81.8, lived in intact homes, 11.9% with Mother only, 1.4% with Father only, 3.1% with Mother and Step-father, 1% with Father and Step-mother, while the remaining .6% resided with a guardian. Table 7 provides a summary of other demographic data of interest. It will be noted that a very high level of education and occupation is represented among the families of participants. This would be expected in view of the selective nature and tuition requirements of the independent and parochial schools as well as the relatively high socio-economic status of the two geographic areas where the public co-ed high schools are located.

School Differences

Statistically significant differences in fathers' and mothers' education and occupation exist among the schools. Similarly significant differences exist among schools for mothers' work status. All differences found are beyond the .001 level of significance (see Appendix C). Only the work status of fathers does not differ among schools. Table 8 presents the comparative data for the six schools where it may be noted that although the socio-economic status of the total population is quite high, there is in fact

Table 7

Educational Level, Work Status, and Occupational Level of Parents of Program Cohort

Demographic Dimension	Father %	Mother %
Educational Level:		
1. Graduate or Professional Degree	39.5	15.7
2. Master's Degree	21.1	28.6
3. Bachelor's Degree	10.2	18.9
4. One to three years of college	5.6	6.1
5. Associate Degree	16.3	26.4
6. Certificate of Completion from Technical or Trade School	6.8	3.6
7. High School Diploma	.4	.7
8. Completion of Tenth/Eleventh Grade		
Work Status:		
1. Full-time	91.0	36.7
2. Part-time	3.0	15.2
3. Volunteer (unpaid)	.7	13.4
4. Does not work outside home	.4	10.7
5. Does not work outside home now, but did	2.2	15.2
6. Full-time and volunteer	2.6	1.5
7. Part-time and volunteer		3.7
8. Formerly worked; volunteers		3.7
Occupational Level (Hollingshead):		
1. Higher Executive/Major Professional	36.0	2.2
2. Managerial/Lesser Professional	18.7	19.9
3. Administrative/Semi-Professional	18.4	10.1
4. Clerical/Sales	6.4	17.7
5. Skilled Manual	12.0	2.9
6. Semi-Skilled Manual	6.4	4.0
7. Unskilled Workers	1.9	1.4
8. Full-time Houseperson	.4	41.9

Table 8

Educational Level, Work Status, and Occupational Level of Parents of Program Cohort by School in Percentages

Demographic Dimension	Parochial I (n=67)		Parochial II (n=39)		Private I (n=22)		Private II (n=14)		Public I (n=82)		Public II (n=94)	
	F	M	F	M	F	M	F	M	F	M	F	M
Educational Level:												
1. Graduate or Professional Degree	9.3	5.3	11.1	0	75.0	27.3	50.0	9.1	42.5	24.7	56.3	19.3
2. Master's Degree	11.1	8.8	3.7	5.9	15.0	59.1	50.0	45.5	20.5	27.4	31.3	42.2
3. Bachelor's Degree	18.5	15.8	14.8	17.6	0	0	0	27.3	13.7	17.8	3.8	26.5
4. One to three years of college	11.1	5.3	11.1	11.8	0	9.1	0	9.1	5.5	5.5	2.5	3.6
5. Associate Degree	38.9	59.6	25.9	44.1	10.0	4.5	0	9.1	13.7	21.9	5.0	8.4
6. Certificate of completion from Technical or Trade School	11.1	5.3	33.3	17.6	0	0	0	0	2.7	1.4	1.3	0
7. High School Diploma	0	0	0	2.9	0	0	0	0	1.4	1.4	0	0
Work Status:												
1. Full-time	90.9	34.5	96.4	31.3	94.7	27.3	91.7	0	87.8	43.5	91.1	42.0
2. Part-time	1.8	18.2	0	9.4	5.3	4.5	0	9.1	4.1	18.8	3.8	16.0
3. Volunteer (unpaid)	1.8	10.9	0	6.2	0		0	18.2	1.4	8.6	0	16.0
4. Does not work outside home	0	5.5	3.6	21.9	0	9.1	0	63.6	0	2.4	0	9.9
5. Does not work outside home now, but did	1.8	21.8	0	28.1	0	9.1	8.3	9.1	2.7	14.5	2.5	8.6
6. Full-time and volunteer	3.6	1.8	0	3.1	0	0	0	0	4.1	1.4	2.5	1.2
7. Part-time and volunteer	0	3.6	0	0	0	0	0	0	0	5.8	0	4.9
8. Formerly worked; volunteers	0	3.6	0	0	0	18.2	0	0	0	4.3	0	1.2
Occupational Level:												
1. Higher Executive/Major Professional	5.6	0	0	0	80.0	4.5	72.7	0	31.1	2.7	57.5	3.7
2. Managerial/Lesser Professional	22.2	7.0	17.9	9.4	10.0	13.6	9.1	8.3	18.9	21.9	20.0	34.6
3. Administrative/Semi-Professional	25.9	8.8	7.1	6.3	5.0	4.5	18.2	0	24.3	15.1	15.0	11.1
4. Clerical/Sales	9.3	28.1	7.1	12.5	0	0	0	8.3	5.4	23.3	7.5	13.6
5. Skilled Manual	25.9	1.8	28.6	6.3	0	0	0	0	13.5	6.8	0	0
6. Semi-Skilled Manual	11.1	12.3	28.6	6.3	0	4.5	0	0	4.1	0	0	1.2
7. Unskilled Workers	0	1.8	10.7	9.4	5.0	0	0	0	1.4	0	0	0
8. Full-time Houseperson	0	40.4	0	50.0	0	72.7	0	83.3	1.4	30.1	0	35.8

F = Father
M = Mother

considerable variability among the schools. Graduate training of fathers, for example, ranges between 9.3% and 75%. Similarly there is one school where 80% of the fathers are rated at Hollingshead Level I and another where none of the fathers are employed as higher executives and major professionals. Mothers' employment is another interesting differentiating feature ranging between a private school with no mothers in full-time employment to a public school where 43.5% of the mothers are employed full time. In general, the rate of maternal employment is lower than the national average (60%). This observation coupled with the high percentage of intact families permits the inference that the talented young women come from very traditional homes with traditional values regarding women's roles. Parenthetically the relationship between the mothers' level of education as compared with her occupational level appears to corroborate the frequently observed finding regarding the underemployment of women. Thus the talented cohort's mothers while possessing high levels of educational preparation, when employed, are disportionately in lower occupational ranks when compared with the fathers.

Talent Differences by School

As alluded to in an earlier section, there were significant differences among the six schools with respect to the distributions of talent. Thus patterns of emphases within schools can be readily discerned as Table 9 shows. Only the leadership and visual arts talent categories fail to differentiate among the schools. In all other cases and even within the three school control categories, there are interesting differences, as, for example, the emphasis in performing arts characterizing Public School II as contrasted with the heavy academic emphases of Public School I. Such distinctive differences between the two parochial and two private schools are also readily apparent where Parochial School II surpassed Parochial

Table 9

School Differences on Talent Dimensions

Talent Dimensions	Parochial I (n=57)a	Parochial II (n=35)a	Private I (n=22)a	Private II (n=12)a	Public I (n=76)a	Public II (n=84)a	F Value
	mean	mean	mean	mean	mean	mean	
Academic:							
General Aptitude	-	-	4.41	4.14	-	3.89	2.71*
Differential Aptitude	4.48	4.00	3.38	4.91	4.49	-	9.56***
English Achievement	4.21	3.41	4.23	4.29	4.68	4.31	11.91***
Math Achievement	4.33	3.71	4.05	4.07	4.61	3.92	6.90***
Science Achievement	-	-	-	-	4.28	3.63	9.11***
English Grades	3.79	2.74	4.05	3.71	4.05	3.81	7.86***
Math Grades	4.25	2.78	3.77	3.43	3.48	3.36	8.28***
Science Grades	3.76		3.48	3.62	4.00	3.32	3.33**
Non-Academic:							
Leadership	1.66	1.90	2.23	1.71	1.48	1.67	1.92
Home Related	2.21	1.97	2.27	1.93	1.76	1.72	3.23**
Athletics	2.69	2.38	3.64	3.64	2.27	2.56	6.46***
Community Involvement	2.63	2.08	2.09	1.79	1.91	2.00	3.90**
Employment	2.43	2.69	3.14	2.07	2.11	2.13	4.22***
Literary Arts	1.51	1.72	2.50	1.50	1.33	1.80	6.09***
Visual Arts	1.72	1.90	2.14	1.93	1.80	1.89	.53
Co-Curricular	1.60	2.08	2.91	1.71	1.39	1.68	9.88***
Performing Arts	1.96	2.55	1.97	2.57	2.22	3.10	6.75***

* $<.05$
** $<.01$
*** $<.001$

a = numbers vary as a function of data available for academic dimensions.

School I in co-curricular activities and performing arts but was, in turn, surpassed in community involvement and in the academic areas. Similarly the two independent schools display contrasting patterns with respect to a number of the non-academic areas, the most outstanding of which are: employment, co-curricular activities, and the performing arts.

Examining differences across schools reveal distinctive features of the individual schools. It may be inferred that Private School I either through initial selection or educational philosophy encourages co-curricular activities, the literary arts, and outside employment more than its counterpart. The greater emphasis on high levels of accomplishment in athletics within the independent school sector may in turn reflect an interaction between economic resources and family values just as the community involvement area for Parochial School I may reflect the interaction of family and school values.

Clearly initial assumptions about similarities within sectors were erroneous as the evidence refutes the initial assumption made by the writers that school control would be the basis upon which scores could be pooled. Combining students by the school control variable is clearly not, in fact, warranted by the data as the two schools in each sector differ as markedly from each other in talent patterns as they do from those with different administrative control.

Internal and External Barriers

Personality and Career Aspiration Differences: Program Cohort

Selection of a test battery that would meet a number of criteria deemed essential for achieving project purposes was a critical early phase. The requirements for inclusion of each sub-test demanded, in addition to the traditional psychometric properties, that the scales be sex-fair,

relatively non-controversial where the schools were concerned, and contribute to accurate diagnoses of internal and external barriers. In the aggregate it was necessary that the battery be sufficiently brief for administration during one sitting as well as challenging for talented young women. The Spence-Helmreich (1978) Personal Attributes Questionnaire (PAQ), and the Work and Family Orientation Questionnaire (WOFO-2), available from the authors for research purposes when the present study was initiated appeared to meet the criteria reasonably satisfactorily. In addition the Texas Social Behavior Inventory (TSBI) (Helmreich and Stapp, 1974) - a 16 item scale - was used to measure social self esteem. It has a reported Cronbach alpha of .91. The PAQ yields scores on Masculinity (M) or instrumental, agentic characteristics, Femininity (F) or expressive, communal attributes and Masculinity-Femininity (M-F) comprised of items tapping aggressiveness and dominance and a second cluster of items tapping emotional vulnerability and the need for emotional support. The Cronbach alphas were .85, .82, and .78 for M, F and M-F respectively yielding satisfactory reliabilities for each of the eight item scales. WOFO-2 consists of 14 items divided into four scales: Work orientation, Mastery, Competitiveness and Personal Unconcern with somewhat lower Cronbach alphas than the PAQ ranging from .39 for work, .54 for competitiveness, .55 for personal unconcern (lack of concern for opinions of others regarding one's achievement), to .60 for mastery. As WOFO-2 was developed in an effort to measure a multi-dimensional conception of achievement motivation responsive to the unique manifestations of achievement orientation in women, it was thought to be particularly appropriate to Project Choice's purposes.

Fear of Success (FOS) as derived from Horner's work in 1968 was another important construct included for measurement within the battery, notwithstanding serious issues raised regarding its original conceptualization

(Tresemer, 1977). The persuasiveness of the arguments of critics resulted in modifications of the cues used initially and for the post-test administration.

Pre-test Cues:

1. "Half of Anne's classmates in medical school are women. After first term finals, Anne finds herself at the top of her class."
2. "After first term finals, Judy finds that she is the top child psychology graduate student."
3. "Nancy and the boy she has been dating for over a year have both applied to the same highly selective university."

Post-test Cues:

While the first two cues remained the same except for changes of name, the third cue was replaced with the following:

Alternate 3. "After much work, Judy has finally gotten what she wanted."

Modifications from Horner's 1968 work were introduced in response to the work of Lockheed (1975) and Condry and Dyer (1976) among others which suggests that the complexity of fear of success requires separating those determinants of FOS that reflect fear of deviance from sex-role expectations as culturally defined from more general fears regarding the negative consequences of achieving success. Inasmuch as only cues 1 and 2 were repeated for the experimental and Junior class, comparisons are limited to sums across only those two cues. For computational purposes in computer analyses, the scale was reversed such that a zero score represented presence of Fear of Success while 2 or 3 equalled absence of FOS, as the case may be.

Horner's 1970 scoring system was used by the three experienced clinicians and counsellors responsible for scoring the 1,850 stories written pre- and post-test. All stories were scored by two scorers who then reconciled those discrepancies in judgment that occurred. At times a third judge was used to mediate differences in interpretation still remaining. Percentage

of agreement between raters ranged from 84 to 93 percent for the various questions and administrations. (See Appendix D).

A doctoral candidate and school psychologist, Jane Moore, is presently completing a doctoral dissertation based upon these FOS data as related to the Spence-Helmreich (1978) Personal Unconcern Scale which taps an attribute Spence believes to be highly related to the Fear of Success.

Interrelationships among the personality and motivational variables for the 284 sophomore women are provided in Table 10. It should be noted that FOS has been entered in terms of its absence, i.e. as a positive attribute. The relatively high inter-correlations among the PAQ, WOFO-2, and TSBI measures are for the most part consistent with Spence and Helmreich's (1978) findings. Less is known about the characteristics of WOFO-2 as these scales have been under recent revision. Of interest in the present context and supportive of Spence's results are the high inter-relationships between the instrumental quality of the M scale and Social Self Esteem reported by Spence for female high school students as r = .66, identical with our data. The correlation of self esteem with the M-F scale was even higher for our sample (.47) than the .42 correlation Spence reports. The instrumental, agentic attribute measured by the M scale again shows very high correlations with the achievement scales of work and mastery whereas the F scale although significantly related to work is lower (r = .27) and does not reach significance with mastery in our data.

The Absence of Fear of Success Index which was developed for our sample correlates at the .05 level of significance with the M scale. It correlates .16 with Spence's Personal Unconcern Scale which she believes measures that aspect of an absence of fear of success indicative of a lack of concern with how others view one's achievements.

Table 10

Correlation Matrix of Personality Attributes for Program Cohort

Variable	Self Esteem	Male	Female	PAQ/ Total	MF	Work	Competi-tiveness	Personal Unconcern	Absence of Fear of Success	Mastery
Self Esteem	1.0000									
Male	.6666	1.0000								
Female	.2876	.1105	1.0000							
PAQ/ Total	.7132	.8726	.3792	1.0000						
MF	.4731	.5792	-.1802	.7436	1.0000					
Work	.2522	.4152	.2726	.3975	.1252	1.0000				
Competi-tiveness	.1098	.2970	-.1306	.1313	.0489	.1420	1.0000			
Personal Unconcern	.1174	.0314	.0135	.0932	.1369	.0147	-.2292	1.0000		
Absence of Fear of Success	.0148	.0249	.0163	.0142	-.0151	.0091	.0187	.1559	1.0000	
Mastery	.3306	.4308	.1056	.3682	.1861	.4814	.1844	-.0279	-.0351	1.000

N = 284
DF = 282
P < .05r = .1164
P < .01r = .1526

Personality Differences by Talent Ratings

A large-scale analysis was undertaken to determine whether or not the personality and motivational attributes would discriminate within the talent dimensions, i.e. would the personality scales differentiate among the levels of math achievement talent for example? Contrary to expectation, such differences occurred in only a limited number of instances as Table 11 illustrates. Because of the enormity of the statistics generated during these analyses for the 17 talent dimensions and the 10 personality measures, the decision was made to include only the F values for those comparisons attaining significance at the .05 level or better.

For the General Aptitude category based upon the 115 for whom an I.Q. score was available, the lowest rated group differed from their higher rated peers in that they were significantly less Feminine and, interestingly, were significantly (.001 level) lower in the work scale than those with higher test scores. The group highest in the English Achievement category as measured by standardized tests also was significantly lower on the F scale. Those few students rated lowest on English Achievement were also lowest in Personal Unconcern. In the English Grade category, it was those rated 2 (GPA = C) who differed from peers in being less competitive while in the Math Grade category, the highest group (A grade) had the highest work scale total. The B+ and A math groups also were freer of Fear of Success than those talented young women with lower math grades.

The pattern in Science Grades is similar in that those with high science grades had significantly higher work scores and less FOS, although the C students were significantly more competitive.

Within the non-academic areas, those with high leadership ratings show higher social self-esteem scores, higher femininity, and somewhat higher

Table 11

Summary of Personality Differences by Talent Ratings for Program Students
(F Values)

	Texas Social Behav. Inv.	Personal Attributes Questionnaire				Work & Family Orientation Scale				Fear of Success
		M Scale	F Scale	M-F Scale	PAQ Total	Work	Competit.	Mastery	Pers. Uncon.	
General Aptitude (n=115)	N.S.	N.S.	2.70*	N.S.	N.S.	5.73***	N.S.	N.S.	N.S.	N.S.
Differential Aptitude (n=181)	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
English Achievement (n=270)	N.S.	N.S.	3.73**	N.S.	N.S.	N.S.	N.S.	N.S.	2.87*	N.S.
Math Achievement (n=270)	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
Science Achievement (n=145)	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
English Grades (n=286)	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	2.70*	N.S.	N.S.	N.S.
Math Grades (n=285)	N.S.	N.S.	N.S.	N.S.	N.S.	2.40*	N.S.	N.S.	N.S.	2.92**
Science Grades (n=229)	N.S.	N.S.	N.S.	N.S.	N.S.	5.17***	3.12*	N.S.	N.S.	3.95**
Leadership (n=286)	2.76*	N.S.	2.78*	N.S.	2.46*	N.S.	N.S.	N.S.	N.S.	N.S.
Home Related (n=286)	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	2.81*	2.38*	N.S.
Athletics (n=286)	3.21**	5.25***	N.S.	2.55*	3.93**	2.69*	2.53*	3.26**	N.S.	N.S.
Community Involvement (n=286)	N.S.	2.30*	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
Employment (n=286)	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	2.63*	N.S.	N.S.
Literary Arts (n=286)	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
Visual Arts (n=286)	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
Co-Curricular (n=286)	N.S.	N.S.	N.S.	N.S.	2.29*	2.66*	N.S.	3.51**	N.S.	N.S.
Performing Arts (n=286)	N.S.	N.S.	N.S.	N.S.	N.S.	3.10**	N.S.	N.S.	N.S.	N.S.

* <.05 ** <.01 *** <.001

PAQ totals (although not in all comparisons) than those with less outstanding leadership ratings.

The area of athletics produces the most differences among the talent ratings with the top athletes (although not on all intergroup comparisons) showing higher self esteem, higher scores on the M, M-F, PAQ Total, Work, Competition, and in some instances on Mastery as well. These findings parallel Spence's results with female college athletes although she also found her athletes to have significantly less Personal Unconcern whereas the present sample showed no such differences.

An interesting differentiation occurred within the Employment category on the Mastery scale where the top rated group and the lowest (other than those with no work history at all) had the highest scores. The Work scale itself failed to discriminate. Total PAQ, Work, and Mastery did, however, differentiate within the co-curricular group but only between those low in this activity and those more active in school groups. Lastly, those with higher ratings on the literary arts did attain higher scores on the Work scale.

Career Aspirations and Sensitivity to Career Issues

John Holland's Self Directed Search (1972) was adopted as the measure of career development for its attractive feature of self-administration and self-scoring as well as brevity. The issue of its sex fairness remains, notwithstanding Holland's arguments (in Diamond, 1975) to the contrary.

The three occupational daydreams were coded using Hollingshead criteria as a measure of level of aspiration in some analyses. The traditional occupational codes were used as well. A considerable amount of work has been invested in Holland's model of the relationship of personality types to environmental models. Reported reliabilities range from .83 for the summary code to as low as .41 for the Realistic category in samples of high school girls (Holland, 1972).

As an approach to identifying external barriers to women's equity, two checklists were developed by Project staff in order to tap how sensitive the young women were to career related issues in general and women's issues in particular. The first, Problems Checklist (see Appendix E), consists of 13 items including one option where the student may add any additional issues not present in the list. These items included concerns around finances, education, lack of talent, race, etc. as the student might perceive them. The Sex Discrimination Checklist (see Appendix F) consists of nine items specific to women and the job market and included items having to do with loss of femininity, competition, home responsibilities, etc. perceived to be problems to the individual. Pre/post comparisons on these checklists will be discussed in connection with program validation under Objective III.

The first, second, and third occupational [illegible]s were compared for each of the talent categories in accordance with p[illegible]ocedures for analyzing all variables of interest. These analyses will not be reproduced here for

only one comparison attained the .05 level of significance, the second occupational daydream for the General Aptitude rating category (F = 3.37). Given the fact that 51 F tests were run on these data, chance alone would predict at least two significant differences. It can therefore be concluded that no differences in occupational daydreams exist for the levels of talent within the seventeen talent categories.

School, Socio-economic, and Racial Differences on Personality and Career Aspirations

It was originally hypothesized that sharp school, socio-economic, and racial differences in personality attributes and career aspirations would occur. In actuality as Tables 12, 13, and 14 show, few statistically significant differences were found for the various groups. Among the schools, significant differences occurred on the Femininity Scale, Absence of Fear of Success and in the third occupational daydream comparison.

While the two parochial schools received the highest Femininity scores, one of which differed significantly from all other schools, the two public schools were quite similar to each other; the private schools differed in that one had the lowest mean Femininity score and the other was among the highest. Again the parochial schools manifested greater Fear of Success in comparison to Public School I which in turn was significantly lower than Public School II while the two independent schools occupied intermediate positions on this variable. Occupational Daydream III yielded a highly significant omnibus F for school differences. The meaning of this differentiation is not entirely clear for the requirement was for each individual to go back over time and reveal early aspirations. Apparently the private school students maintain their high aspiration levels over time while the parochial students start at lower levels in their early daydreams.

Table 12

School Differences on Personality Dimensions and Career Aspirations

Personality Dimension and Career Aspirations	Parochial I (n = 57)	Parochial II (n = 35)	Private I (n=22)	Private II (n=12)	Public I (n=76)	Public II (n=84)	F Value
	Mean	Mean	Mean	Mean	Mean	Mean	
Texas Social Behavior (social self esteem)	3.83	3.64	3.66	3.58	3.65	3.55	1.89
Personal Attributes Quest.							
Masculinity	3.82	3.50	3.72	3.82	3.63	3.59	2.07
Femininity	4.05	4.17	4.01	3.77	3.97	3.89	3.01*
M-F	2.92	2.88	2.70	2.90	2.98	2.85	1.05
Work & Family Orientation							
Work	4.47	4.37	4.51	4.44	4.40	4.32	1.20
Mastery	3.49	3.41	3.66	3.67	3.39	3.36	1.71
Competitiveness	3.51	3.43	3.75	3.85	3.36	3.44	1.66
Personal Unconcern	3.52	3.50	3.39	3.48	3.57	3.55	.26
Fear of Success (Absence)	1.58	1.43	1.64	2.08	2.03	1.54	3.07**
Self Directed Search							
1st Occup. Daydream	2.20	2.11	1.64	1.67	1.99	1.86	1.45
2nd Occup. Daydream	2.35	2.35	1.74	1.83	2.14	1.95	1.95
3rd Occup. Daydream	2.73	2.35	1.68	1.42	2.09	2.01	5.31***

* = P <.05
** = P <.01
*** = P <.001

Table 13

Socioeconomic Differences on Personality Dimensions and Career Aspirations

Personality Dimensions and Career Aspirations	High SES (n = 96)	Middle SES (n = 99)	Low SES (n = 72)	F Value
	Mean	Mean	Mean	
Texas Social Behavior (social self esteem)	3.63	3.62	3.75	1.41
Personal Attributes Quest.				
Masculinity	3.64	3.66	3.69	.14
Femininity	3.95	3.95	4.09	2.77
M-F	2.86	2.90	2.90	.16
Work and Family Orientation				
Work	4.40	4.37	4.45	.70
Mastery	3.43	3.40	3.49	.62
Competitiveness	3.47	3.43	3.58	.91
Personal Unconcern	3.45	3.54	3.53	.44
Fear of Success (Absence)	1.61	1.82	1.69	1.00
Self Directed Search				
1st Occup. Daydream	1.86	2.03	1.97	.66
2nd Occup. Daydream	1.93	2.13	2.43	4.08*
3rd Occup. Daydream	1.83	2.28	2.45	6.66**

* = $P < .05$
** = $P < .01$
*** = $P < .001$

Table 14

Racial Differences on Personality Dimensions and Career Aspirations

Personality Dimensions and Career Aspirations	White (n=244)	Black (n=35)	F Value
	Mean	Mean	
Texas Social Behavior (social self esteem)	3.66	3.67	.23
Personal Attributes Quest.			
Masculinity	3.66	3.61	.28
Femininity	3.99	3.99	.24
M-F	2.89	2.90	.16
Work and Family Orientation			
Work	4.40	4.36	.31
Mastery	3.43	3.40	.88
Competitiveness	3.44	3.70	3.85*
Personal Unconcern	3.53	3.49	.88
Fear of Success (Absence)	1.68	1.66	.02
Self Directed Search			
1st Occup. Daydream	2.00	1.83	.75
2nd Occup. Daydream	2.12	2.05	.10
3rd Occup. Daydream	2.14	2.35	1.00

* = P < .05
** = P < .01
*** = P < .001

(These levels are scored on Hollingshead criteria where 1 is high -- professional, major executive -- and 7 is low -- unskilled labor.)

It is only on the second and third occupational daydreams where any socio-economic differences occur. Again it may be inferred that these differences are a function of the restriction in exposure to different careers experienced when they were younger by those who are less economically privileged. What is not known is the stage of life that is represented by the second and third choices, for instructions only suggest that the individual go back in time. For some, the second choice may represent last month's aspiration; for others, aspiration at age 9 may be the response provided.

Examination of racial differences yields only one instance of a statistically significant finding, that occurring in the competitiveness score where Black students received higher scores. This difference may reflect demands for these talented Black students to compete in the majority controlled school and societal environments in ways that are different from their white peers.

In general the similarities among the talented far outweigh their differences. In some respects the impact of Project Choice intervention can be better viewed in terms of its effectiveness for a talented sample of high school women with a range of intra-individual differences, rather than as a comparison of between group differences for the talented.

Objective II. The Design and Use of Strategies for Removing Internalized and Institutional Barriers to the Fulfillment of the Potential of Talented High School Women.

The four Tasks associated with the attainment of Objective II were accomplished in accordance with proposal projections as follows:

Task 11: To develop individually prescribed intervention strategies.

Project staff began developing intervention strategies first for the various subgroups which were characterized by evidence of specific internal barriers. Additional individualized strategies were developed to address individual differences in career development. Additional strategies were also developed for addressing the various external barriers facing program participants. (See Project Choice Manual for detailed descriptions.)

Task 12: To develop a diagnostic-prescriptive career development model for women.

Given the available data, a preliminary model was developed. This model however was subject to modification as additional data and experience was obtained from the field testing of the program generated from the model. Figure I provides an overview of the components believed to be essential features for the core program within which adaptation for specific student characteristics could be flexibly introduced. Within the general framework, provision for those with low self-esteem, fear of success, low achievement motivation, or lack of assertiveness skills could be accommodated as well as for students whose backgrounds, career awareness and informational resources were limited in one way or another.

Task 13: To coordinate with school personnel and students a convenient schedule for implementing individualized strategies.

A master schedule for group meetings was established in order to accommodate participants' needs as determined through the diagnostic phase. As required by the research design, some groups were exclusively for internal barrier students, some exclusively for those without identified internal barriers, and some were to be mixed. Through random assignment, students were placed in their appropriate groups or in a mixed group with alternative times built in to accommodate scheduling conflicts for students with heavy work and extra curricular responsibilities. This resulted in a total of 16 groups: two groups after school each day, Monday through Thursday, four groups Saturday morning and

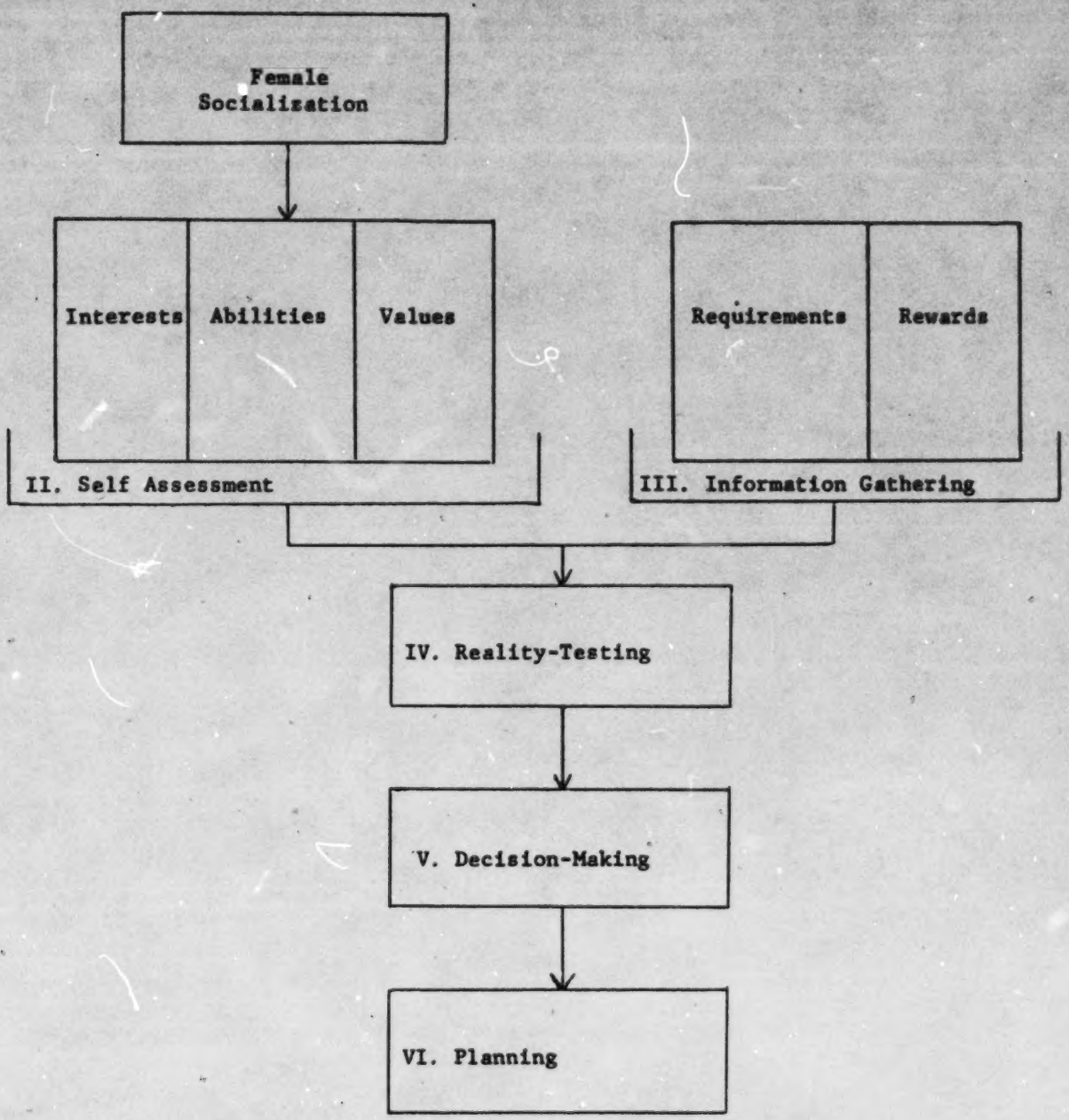

Figure 1

PROJECT CHOICE
Career Development Model

four groups Saturday afternoon. Workshops were scheduled on three Sundays during the four month period while mentorships were arranged on an individual basis.

Task 14: To implement the specific intervention strategies prescribed for each student.

Group leaders convened two mornings each week to formulate plans for activities and experiences, evaluate session effectiveness, revise them where appropriate, prepare materials, and make arrangements for upcoming phases. Materials were acquired for a well furbished career information laboratory and contacts made with professional women and their organizations for Sunday workshop participation and role model assignments. Demands on staff were extraordinary as seven day weeks were not uncommon. The weather unfortunately became a large obstacle to program implementation for the series of blizzards of the Winter of '77 created serious problems forcing session cancellations, the unprecedented closing of the University on several occasions, and creating conditions that made it virtually impossible for many participants to reach the University at all. Materials were mailed to participants, telephone contact was initiated, and efforts to make up lost ground were arranged whenever possible in an effort to minimize the ravages of Winter. Group leaders made special efforts to get to know each student and guide her to the most appropriate informational and human resources throughout.

Results of Data Analyses for Objective II.

Distributions of Diagnostic-Prescriptive Groups

Assessment of career information needs based upon test and questionnaire data was a critical first step in programming. Therefore, each student was diagnosed individually with respect to the status of her then current thinking about the future in terms of her level of aspiration, crystallization of direction, and resultant need. For some students, it became abundantly clear that their aspirations were inappropriately beneath the reality of their high abilities of which they were seemingly unaware. Thus a young woman with the highest ratings in ability, achievement, and grade measures would report aspiring to cosmetology seemingly unaware of other possibilities in challenging and in many cases, more non-traditional areas. Others with less distinguished records aspired to professions like neurosurgery with the view that following education and training they would take twenty years off to raise a family and then resume medical practice. For such individuals, the program objectives included providing information and support directed toward raising career aspirations or providing what was termed "back-up alternatives" in an effort to assist the young women to begin thinking about occupations that might be more appropriate to their abilities, interests, and values.

Table 15 reveals some interesting differences among the schools with respect to programming needs in the career aspiration area. Whereas 42.1% of the students in Parochial School I were diagnosed as needing assistance in raising their aspirations, no student in Private School II and only 3.6% of Public School II evidenced such a need. In contrast, 31.8% of the Private School I's students and only 7.9% of Public School I's students were assessed as requiring guidance in exploring back-up

Table 15

Distribution of Career Aspiration Diagnosis for Program Cohort by School
(Percentages)

	Total of Cohort	Parochial I	Parochial II	Private I	Private II	Public I	Public II
1. Back-up Career Aspirations	18.2	19.3	20.0	31.8	25.0	7.9	21.4
2. Raise Career Aspirations	16.4	42.1	22.9	9.1	0	13.2	3.6
3. Multiple Aspiration Issues	1.4	0	0	9.1	8.3	0	1.2
4. Other	64.0	38.6	57.1	50.0	66.7	78.9	73.8

alternatives to their career choices. The category "other" in Table 15 brings the school differences into sharper relief by illustrating the disproportionate number of issues related to level of aspiration for Parochial School I as compared with Public School I.

School differences are also underscored in Table 16 which presents data on the career informational needs as diagnosed for the program cohort. Indications of the level of sophistication of students may be inferred from this material as it underscores the diffuseness of thinking as well as progress toward crystallization of career decision-making. It should be emphasized that the program staff was not striving for premature closure in career decision making, but rather sought to broaden horizons or clarify options already formulated. Thus some students recognizing interests and abilities in the sciences might state they wished to have a career in science, otherwise unspecified, or stated that they had no idea whatever what they wished to do while others were narrowly focused upon one restricted alternative, e.g. retail sales in a boutique. Such differences in the need for career information are illustrated in the contrast between Parochial School II where it was felt that 80.6% of the students needed broadened horizons with only 6.5% ready for more specific career focus as compared with Private School II where 41.7% required elaboration and exploration and 25% appeared to need specific career focus, i.e. the student interested in medicine but needing to examine what the various medical specialities involve.

Students were not only diagnosed on the basis of career aspiration level programming needs and career informational needs but also on the presence or absence of internal barriers to career fulfillment as manifested in assertiveness, fear of success, self esteem, achievement motivation, or a combination of these issues. In accordance with previously established

Table 16

Distribution of Informational Needs for Program Cohort by School
(Percentages)

	Total of Cohort	Parochial I	Parochial II	Private I	Private II	Public I	Public II
1. Career Elaboration/ Exploration	57.9	65.5	80.6	54.5	41.7	60.5	45.2
2. Career Elaboration-Focus	27.9	21.8	12.9	40.9	33.3	28.9	32.1
3. Career Focus	14.3	12.7	6.5	4.5	25.0	10.5	22.6

criteria designating whether or not the issue constituted a serious barrier to career fulfillment for the individual, all students were classified according to need by the Project Director and Manager. Table 17 shows the distribution of internal barriers by school as diagnosed. Thus, serious indications of lack of confidence, consistent fear of success story protocols, the lowest quartile on the competitiveness scale of the WOFO-2, Texas Social Behavior Inventory scores in the bottom quartile, wide discrepancies between ability and achievement (standardized test scores and grade point averages) or a combination of these problems resulted in designating students as candidates for special intervention strategies as described in the Project Choice Handbook.

Contrasts in differential diagnoses of internal barriers by school are startling -- ranging from no barriers identified for 46.1% of Public School I to only 11.4% of Parochial School II diagnosed as having no internal barriers. To illustrate that school control did not appear to be the relevant determinant, it may be noted that it was Public School II with the next highest percentage of internal barriers while Parochial School I had next to the lowest percentage. Patterns among the internal barriers themselves are also quite revealing. Only 6.6% of Public School I was diagnosed as potentially benefitting from Assertiveness training whereas 25% of Private School II were so classified. Differences in Fear of Success ranged between only 5.7% and 8.3% for Parochial School II and Private School II, respectively, all the way up to 27.3% and 23.8% of Private School I and Public School II. Only low Social Self Esteem showed relative consistency across the schools ranging from 28.6% at Public School II to 21.1% at Parochial School I. The Achievement Motivation diagnostic category showed its largest range within the

Table 17

Distribution of Internal Barrier for Program Cohort by School
(Percentages)

	Total Cohort	Parochial I	Parochial II	Private I	Private II	Public I	Public II
1. Non-Assertiveness	11.9	12.3	20.0	13.6	25.0	6.6	10.7
2. Fear of Success	17.5	21.1	5.7	27.3	8.3	11.8	23.8
3. Low Self Esteem	25.5	21.1	25.7	22.7	25.0	26.3	28.6
4. Low Achievement Motivation	11.2	5.3	28.6	9.1	16.7	6.6	11.9
5. Multiple Barriers	4.2	3.5	8.6	4.5	0	2.6	4.8
6. No Internal Barrier	29.7	36.8	11.4	22.7	25.0	46.1	20.2

Parochial sector with 28.6% of Parochial School II receiving this diagnosis while only 5.3% of Parochial School I students were so classified.

While each of the preceding groups was selected because that particular internal barrier appeared to be the only problem area identified or by far the prepotent one, for some students a much more complex and confusing clinical picture emerged. Such individuals were designated as having multiple barriers when it appeared that a number of issues were troubling that student, e.g. low achievement motivation, fear of success, and poor self esteem. Thus it may be noted that while no students with multiple categorization were identified for Private School II, 8.6% of Parochial School II were so classified indicating a far greater percentage of young women dealing with a number of troublesome issues judged to be potentially inhibitory where career fulfillment was concerned.

Experimental Design

Following the diagnostic phase, a design was constructed in accordance with best experimental practice to test the intervention effectiveness. In order to accommodate the 276 students who agreed to participate, 16 groups were planned. Balance between homogeneous and heterogeneous assignment was a further requirement of the evaluation design to test whether internal barrier participants would show greater gains in a group consisting of only their own diagnostic category or in a mixed group consisting of students without any diagnosed internal barriers and with other kinds of internal barriers. Thus, a student diagnosed as having Fear of Success could be assigned to a homogeneous Fear of Success group or to a heterogeneous group comprised of core program students and Self Esteem, Achievement Motivation, Assertiveness, etc. students as well as others requiring Fear of Success focus. Figure 2 provides an

Monday	Tuesday	Wednesday	Thursday	Saturday A.M.	Saturday P.M.
				Group 9: Assertiveness N = 16 (16 IB)	Group 13: Fear of Success N = 17 (17 IB)
Group 1: Core Program N = 18 (18 NIB)	Group 3: Fear of Success N = 20 (20 IB)	Group 5: Self Esteem N = 18 (18 IB)	Group 7: Achievement Motivation N = 17 (17 IB)	Group 10: Self Esteem N = 16 (16 IB)	Group 14: Multiple IB N = 14 (12 IB, 2 NIB)
Group 2: Core Program N = 20 (12 IB, 8 NIB)	Group 4: Core Program N = 19 (14 IB, 5 NIB)	Group 6: Core Program N = 20 (12 IB, 8 NIB)	Group 8: Core Program N = 18 (11 IB, 7 NIB)	Group 11: Core Program N = 16 (7 IB, 9 NIB)	Group 15: Core Program N = 15 (5 IB, 10 NIB)
				Group 12: Core Program N = 15 (9 IB, 6 NIB)	Group 16: Core Program N = 17 (17 NIB)

Key:
IB - Internal Barrier
NIB - No Internal Barrier

Figure 2

Randomized Homogeneous-Heterogeneous Group Assignments for Participants with and without Internal Barriers

illustration of the grouping pattern. The number of alternative groups established was, of course, a function of the incidence of the category. There were fewer diagnosed as needing Achievement Motivation, Assertiveness Training, and having multiple needs than there were those requiring groups dealing with Self Esteem, Fear of Success, and the core program. By generating random numbers students were then assigned to the aforementioned balanced homogeneous or heterogeneous groups. Program staff, blind as to the group designation, then telephoned the students regarding the schedule, a procedure that was undertaken in phases since adjustments could be made if, for example, a Self Esteem student could not accept a Wednesday afternoon assignment but was available on Saturday mornings. The groups were thus planned for from 15 to 20 individuals initially but in recognition that the drop-out rate would bring them into more acceptable sizes for small group work.

Objective III. Validation of Program Effectiveness.

The nine tasks related to program effectiveness were completed as follows:

Task 15: To administer the post-test diagnostic battery to all talented students for whom parental consent was obtained.

The post-test battery including a revised interview schedule with specific program evaluation items was administered by the staff at each school site to program participants and non-participants in accordance with pre-test procedures. This latter group of students (N=44) who for a variety of reasons did not attend the program constituted a naturally occurring control group along with junior class members (N=98) from the previous year to whom the battery of instruments was also administered. Thus, a contrast group from the previous year's junior class as well as talented non-participants from the class of 1979 provided comparative data.

Task 16: To score and analyze all data for all groups: all sophomore women, talented participants and non-participants pre-post; junior class talented comparison group, post only.

Staff and technical assistants scored, double-coded, reconciled and card punched all instruments yielding a data set of 26,250 IBM cards summarizing 1,680 variables for 1,239 sophomores of whom 318 were talented -- 230 participants and 88 non-participants. Ninety-eight talented students from the class of 1979 comprised a contrast group. The 25 cartons of IBM cards were then hand delivered by the Project Director and Project Manager to the University of Michigan Computer Center. In concert with the statistical consultants, the data set was then organized, cleaned, preliminary runs completed, and preparations made for interactive use on a computer terminal in Cleveland.

Task 17: To assess the effectiveness of the intervention strategies.

The Project Director and Project Manager clinically assessed each talented participant and non-participant on a seven-point rating scale for growth in career maturity and on improvement on the internal barrier dimension when it was present for that individual. Differences in growth among those who were active participants, those who were low participants, and those who did not participate at all were determined. Pre-post comparisons on all instruments for these groups were also undertaken as were post-test only analyses for the class of 1979 contrast group compared with program participants where appropriate.

Task 18: To revise the diagnostic-prescriptive model.

Based upon reactions from participants, group leaders engaged in a continuous process of program modification during the weekly staff meetings. This permitted changes to be made in structured exercises and experiences for program sessions held later in each week as a function of feedback provided from the earlier trials during Monday and Tuesday sessions. Final decisions regarding necessary changes were made following the completion of each unit by everyone involved. Formal and informal suggestions from participants, school counselors, role models, and parents were incorporated into the completed version as reflected in the Project Choice Handbook.

Task 19: To provide training and feedback sessions for school personnel.

As indicated in earlier quarterly reports, some modification of original plans for rather frequent convening of cooperating school personnel were made necessary for a number of reasons. These included difficulties in counselors getting away from their buildings, scheduling conflicts among the six involved units and inclement weather. Nonetheless, the counseling workshops on lifework planning, decision-making and careers that were held for all schools combined were most enthusiastically received (see evaluation data in later section). Inasmuch as each school had its own individual needs, informal on-site contacts occurred with great frequency which in turn permitted a free two-way communication system to operate such that school personnel could receive current information about the program and could keep Project Staff informed in many helpful ways about responses to it. Such reactions as stated earlier were very important contributions to the revision process.

Task 20: To develop a comprehensive handbook for guidance counselors.

Collation and refinement of all materials descriptive of the entire program process was an enormously engaging activity for the staff members. The steps required organizing, formating, and editing descriptions of program rationale, selection, diagnosis, prescription, placement of participants, details of specific interventions including directions for sessions, workshops, role model recruitment, and details regarding program management and evaluation. The presentation was required to be clear, comprehensive, and attractive in order to meet the ultimate test of maximum usability by guidance personnel. Therefore, an elaborate management plan was formulated which established deadlines for writing and editing that were flexibly interpreted given the nature

of the human condition. Each section was discussed in staff meetings following individual review, and then re-edited sequentially by the major writer, the other staff members, and the Project Manager and Project Director. While this internal review process was extremely time consuming and at times cumbersome, the complexity of the undertaking demanded careful attention to the myriad of detail involving keying special group interventions to the core curriculum and leaving no gaps in information vital to independent program implementation by guidance personnel.

Task 21: To analyze data and validate program effectiveness.

Procedures for data analysis tasks related to group comparisons were described under Task 16.. Additional validation activities included tabulation of ratings by students of individual sessions and their over-all impressions as a function of the extent of their individual involvement in the program components. These valuable insights provided evidence regarding the differential impact of specific activities as well as more general reactions to what was gained from participation as well as ways in which the program might be further improved.

Task 22: To produce the final revision of the handbook.

The process whereby revisions were undertaken described in Task 20 continued. Suggestions from the constituencies involved were incorporated. A model of the handbook was then produced utilizing symbols and colored paper to differentiate the individualized approaches for ready use by guidance personnel. Reactions to the mock-up were collected from personnel from each of the six cooperating schools.

Task 23: To provide feedback to parents and students.

During the invitation phase and restated at the time of post-testing was a promise to provide each student with written feedback regarding test results. Construction of letters not only to participants but also to those students who agreed to complete the post-test battery although not able to participate fully in the program or at all was a formidable undertaking. Letters were written to each young woman which highlighted the changes in career planning and personal characteristics over the period of time from sophomore to junior year. Program participants also received additional suggestions for alternative explorations and resources they might consider.

Results of Data Analyses for Objective III.

Formation of Comparison and Control Groups

Although best experimental practice dictates random assignment of subjects to experimental and control groups, such a procedure was ruled untenable in the present circumstances since the schools had established a number of conditions governing their involvement in the project. Among these was the agreement that any eligible young woman who accepted an invitation would be permitted to participate. Therefore, this constraint imposed a formidable obstacle to designing the program evaluation.

Following consultation with AIR and ETS evaluation specialists, it was decided to recruit a group of junior class young women from the same schools who if tested at the end of their third year would provide the basis for comparison with program participants who were to be post-tested at the end of their junior year. While this pre-post-post design is an acceptable approach for the social sciences, it is not without its problems (Campbell & Stanley, 1963); for one, inability to control for history. Thus the Program Cohort was post-tested in the Spring of 1978 while the Junior Class comparison group had been tested in the Spring of 1977.

The more serious issue regarding the junior class comparison group rests with the method by which they were selected. Five of the six schools' counsellors were involved in identifying a group of young women judged to be similar to the program cohort. Under the assumption that the coed public schools were virtually alike, only one public school was included. (This later proved to be an invalid assumption.) Indeed on most demographic variables, the junior class comparison group did not differ from the experimental group. As Table 18 illustrates, only the variable of mother's educational level discriminated between the experimental and comparison group ($x^2 = 12.48$, $P < .05$).

Table 18

Chi Square Values on Demographic Variables
for Junior Class Comparison Cohort and Program Cohort

Demographic Variable	x^2 Statistic	Significance
1. Family Intactness	3.58	N.S.
2. Number of Older Brothers	5.32	N.S.
3. Number of Younger Brothers	13.71	N.S.
4. Number of Older Sisters	7.87	N.S.
5. Number of Younger Sisters	4.67	N.S.
6. Father's Occupational Level	9.28	N.S.
7. Mother's Occupational Level	8.20	N.S.
8. Father's Work Status	3.04	N.S.
9. Mother's Work Status	4.51	N.S.
10. Father's Educational Level	8.60	N.S.
11. Mother's Educational Level	12.48	$P < .05$

Junior Class N = 98

Program Cohort N = 286

To achieve a better anchor on measuring the effects of the program, yet another approach was taken which certain naturally occurring events permitted. As indicated earlier, the extraordinarily difficult weather conditions of the Winter of 1977-78 played havoc with program attendance. This coupled with the very heavy curricular and extra-curricular responsibilities of such a talented group of individuals resulted in naturally occurring controls. One group of young women (N = 88) although scheduled for participation never appeared for any meetings at all. Another group (N = 106) appeared fewer than five times and were designated as low attenders. Thus, a decision made on the basis of distributional characteristics and a clinical judgment that 10 or more hours of program involvement would be required to assess its effects, undergirded the formation of the low and high (N = 124) differentiation.

In summary, then, comparisons which follow will involve, for some aspects, the junior class and will consistently employ the no, low, high attendance distinction. It therefore behooves us to examine these four groups in terms of their talent characteristics. As Table 19 reveals, there were no differences among the groups on eleven talent dimensions but differences did occur on six at the .05 level or better.

It is important to note the direction of the statistically significant differences between means for the six F ratios that attained significance. The first of these, the General Aptitude talent dimension shows that the junior comparison group was significantly lower than the low and high participant groups, as was the no participant group, although it must be noted that the N's are reduced as this measure was available for only 31 no, 40 low, and 56 high attenders and 73 of the juniors. The Differential Aptitude measure failed to show such differences although the N's were more complete -- 53 no, 72 low, 73 high, and 88

Table 19

Summary of F Values for Talent Ratings for Junior Class
Comparison Group and No, Low, High Program Participant Groups

Talent Dimension	Comparison Group	Program Cohort			F-Value
		No Participation	Low Participation	High Participation	
1. General Aptitude	3.60	3.77	4.13	4.07	7.77***
2. Differential Aptitude	4.37	4.32	4.42	4.32	.24
3. English Achievement	3.87	4.17	4.24	4.38	5.58***
4. Math Achievement	3.83	4.08	4.18	4.23	2.98*
5. Science Achievement	(no avail. data)	3.95	3.71	3.99	.89
6. English Grades	3.87	3.66	3.70	3.85	.90
7. Math Grades	3.43	3.33	3.67	3.59	1.48
8. Science Grades	3.91	3.68	3.52	3.65	1.66
9. Leadership	.82	.74	.75	.59	.81
10. Home Related Activities	.55	.77	.96	.97	.99
11. Athletics	1.66	1.44	1.79	1.58	1.23
12. Community Involvement	.91	1.01	1.20	1.12	1.37
13. Employment	2.14	1.34	1.29	1.34	10.01***
14. Literary	.77	.50	.69	.70	1.20
15. Visual Arts	.76	.81	.90	.85	.29
16. Co-Curricular Activities	.83	.47	.81	.83	2.65*
17. Performing Arts	.90	1.53	1.37	1.41	3.66**

* < .05 ** < .01 *** < .001

juniors. English and math standardized test information also revealed statistically significant differences between the program cohort and the Junior class although grades did not. Thus there is the suggestion that those juniors selected by counsellors were a group of successful academic achievers, somewhat less able on general ability and achievement ratings.

Non-academic significant differences occurred for the employment, co-curricular, and performing arts talent dimensions, but did not for the remaining six categories. The difference in employment is immediately understandable in view of the fact that the Juniors were one year older than the program cohort, had reached the age when employment is legally permissable, and clearly had many more work opportunities through living one additional year.

The difference in the performing arts is a more puzzling contrast. Whereas there were no statistically significant differences among the no, low, and high program groups, the Junior class was significantly lower in its ratings. One can speculate that the counsellors were less knowledgeable regarding acting and performing ability and overlooked this group when selecting. There is also some reason to believe that the characteristics of our actresses and musicians are such as not always to endear themselves to school authorities. Viewed against the high achieving pattern of the Junior class, there is reason to believe that the performing arts group would be under-represented in counsellor selections.

The co-curricular talent dimension produced a significant difference between the low attenders and the three other groups. Indeed willingness to join school-related activities may have been tapped in this comparison demonstrating that the no attendance group was behaving in a consistent

way in school and in the program. While they may have initially accepted the invitation because it appeared to be an honor to have been selected, they later reverted to more customary patterns regarding group affiliation.

In sum, the reader while reviewing the presentation of validation material needs to keep in mind those several differences which have been highlighted as differentiating the comparison and no, low, high attendance groups.

Validating the Diagnostic Codes

Internal Barriers

It will be remembered that the diagnoses of internal barriers for the young women and group designations therefrom were based upon clinical assessments using available data globally. Determination of the validity of the group formations became a critical step in the sequence if program effectiveness was to be tested, for if the groups did not differ in predicted ways, the outcomes would be uninterpretable. Therefore, a series of analyses of variance were run for the six diagnostic groups: Non-assertive, Fear of Success, Low Self Esteem, Low Achievement Motivation, Multiple Internal Barriers, and No Internal Barriers on the personality variables and on the occupational self-estimates and competencies.

Perusal of Table 20 provides one of the most interesting sets of findings generated. Strong support for the formation of the groups is immediately apparent. For example, the Low Self Esteem group was significantly ($P < .001$) lower than any other group on the TSBI social self esteem measure; Non-assertiveness differed as well. A similar pattern occurred on the M Scale of the PAQ which it will be recalled measures instrumental qualities wherein the Low Self Esteem and Non-assertive groups are again significantly lower; once again, as was the

Table 20

Personality Attributes of Internal Barrier Diagnostic Groups

Diagnostic Group: Internal Barrier	TSBI	Personal Attributes Questionnaire				Work	Compet.	Mastery	PUN	FOS Absence
		M Scale	F Scale	M-F Scale	PAQ Tot.					
1. Non-assertive (N = 34)	3.52_a	3.56_a	4.04	2.88_a	3.49_a	4.42	3.18_a	3.37	3.51	1.82_b
2. Fear of Success (N = 50)	3.95	3.90	3.98	3.08	3.66	4.50_b	3.60	3.67_b	3.41	$.54_b$
3. Low Self Esteem (N = 73)	3.04_a	3.24_a	3.82_a	2.55_a	3.20_a	4.32	3.41	3.29	3.43	1.64_b
4. Low Achievement Motivation (N = 32)	3.85	3.65_a	4.07	3.00	3.57	4.21_a	3.34	3.30_a	3.69	1.94_a
5. Multiple Internal Barriers (N = 12)	3.82	3.85	4.07	3.12	3.68	4.42	3.48	3.30	3.40	1.00_b
6. No Internal Barriers (N = 85)	3.96	3.88	4.05	3.02	3.65	4.45	3.61	3.51	3.65	2.37_a
Grand Mean	3.65	3.66	3.98	2.89	3.51	4.40	3.47	3.43	3.53	.79
F Statistic	57.31***	17.57***	2.85*	10.34***	22.47***	2.50*	2.32*	4.04**	1.43	12.21***

Key: * $P < .05$
** $P < .01$
*** $P < .001$
a = significantly lower
b = significantly higher

case with the TSBI, the Low Self Esteem group is the lowest. One more interesting contrast relates to the significant difference between the Low Achievement Motivation group and the No Internal Barrier group on the M Scale. On the F Scale, a measure of expressiveness, the Low Self Esteem is once again significantly lower than all other groups.

On the M-F Scale, which Spence indicates is at the one extreme aggressiveness (high) and at the other (low) vulnerability to emotional sensitivity, the Low Self Esteem group is significantly lower than all other groups. The Non-assertiveness group in some contrasts also manifests significantly lower scores on this attribute. The same pattern, of course, prevails for the PAQ Total which represents a summing across the M, F, and M-F Scales.

It is of interest that the Low Achievement Motivation group is identified through the Work Scale, a dimension of achievement motivation as conceptualized by its authors. Thus, this group attains the lowest score while the Fear of Success group receives the highest scores, another confirmation of the latter group's hypothesized motivational dynamic; however, the FOS group does not differ significantly on the Work Scale from the No Internal Barrier Group.

The Competitiveness Scale is discriminating for the Non-assertiveness group where it may be noted that they are significantly less competitive than the Fear of Success group and the No Internal Barrier Group. Similarly the pattern on Mastery is rather revealing in that the Low Achievement Motivation group is significantly below the No Internal Barrier group and the Fear of Success group who, in turn, are significantly higher than every other group except the No Internal Barrier group although a trend ($P \leq .10$) holds here as well.

In terms of assertions by its authors, the Personal Unconcern Scale was disappointing in its failure to differentiate. As a measure of lack of concern regarding how others view one's achievement, it was assumed that the four PUN items would be discriminating for the Fear of Success group. Such was not the case for although this group scored lower numerically than the No Internal Barrier, F = 1.43 failed to achieve significance. On the other hand, on the Fear of Success measure itself, the FOS group manifested solid fear of success (here coded somewhat awkwardly, as more no absence) as did the Multiple Internal Barrier group. These latter 12 young women were placed because their clinical picture suggested that they were grappling with a number of issues including Fear of Success. The Multiple Barrier group represented such wide variability on the other personality measures that a distinct pattern is not otherwise discernable since, for example, some had self esteem problems; others did not. Some had assertiveness issues to deal with; others did not. Therefore, in the aggregate the Multiple Barrier group members cancel each other out on all personality attributes except Fear of Success.

Further support for the validity of the diagnostic categorization comes from the series of analyses of variance performed on the self estimate section of the SDS as Table 21 reveals. The five areas which attained significant F values across the barrier groups were: science ability, teaching ability, sales ability, social ability, and managerial ability. It may be noted that the Low Achievement group gave significantly lower self estimates on their scientific ability than did any of the other internal barrier groups whereas it was on teaching ability that the Non-assertive group rated themselves lower than did any of the other groups with the exception of the Low Self Esteem group who differed

Table 21

Occupational Self-Estimates of Internal Barrier Diagnostic Groups
for Program and Control Cohorts

Diagnostic Group	Mechan. Ability	Science Ability	Artistic Ability	Teaching Ability	Sales Ability	Clerical Ability	Manual Ability	Math Ability	Musical Ability	Friend-liness Ability	Manager. Ability	Office Ability
1. Non-assertive (N = 41)	3.31	4.85	4.07	4.56	3.37	3.49	3.76	5.27	4.13	5.85	4.02	3.40
2. Fear of Success (N = 56)	2.72	4.54	5.02	5.20	3.63	3.09	3.96	5.16	4.54	6.14	4.14	3.09
3. Low Self Esteem (N = 98)	2.96	4.45	4.18	4.99	3.31	3.46	3.87	5.28	4.10	5.44	3.66	3.50
4. Low Achievement Motivation (N = 36)	2.71	3.58	4.64	5.19	4.39	3.36	3.92	4.56	4.44	6.42	4.31	3.42
5. Multiple Internal Barriers (N = 12)	1.73	4.58	4.33	5.67	3.50	3.58	2.92	4.50	5.00	6.25	4.17	4.17
6. No Internal Barriers (N = 139)	2.76	4.79	4.42	5.49	3.93	3.59	3.93	5.22	4.58	6.31	4.66	3.65
Grand Mean	2.98	4.55	4.43	5.20	3.69	3.45	3.87	5.14	4.40	6.02	4.21	3.50
F Statistic	.53	2.84*	1.67	4.05**	3.60**	.74	.94	1.72	1.31	9.80***	5.94***	1.50

* ≤ .05
** ≤ .01
*** ≤ .001

significantly from the No Internal Barrier group. The Low Achievement Motivation group estimated its sales ability significantly higher than all other groups except the No Internal Barrier group. (The trend held even in this instance although statistics failed to reach the required level of significance.) In the case of self estimates of managerial ability, the Low Self Esteem students rated themselves significantly lower than did several of the other groups while the No Internal Barrier group, and, in some comparisons, the Low Achievement Motivation group rated themselves higher on this ability. The Low Self Esteem group rated themselves significantly below every other group on friendliness; the Non-assertive group judged themselves significantly lower than did the FOS and Low Achievement groups, the latter group attaining the highest scores on this self rating.

Table 22 provides data regarding differences among the groups with respect to how each perceived their occupational competencies using the Holland codes. Four of the Holland types differentiated: Investigative, Artistic, Social, and Enterprising. In the comparison on Investigative competency, the FOS group rated themselves significantly higher as would be predicted theoretically while the Low Self Esteem group rated themselves lower than did the No Internal Barrier group. The Non-assertive and Low Self Esteem groups also saw themselves as significantly lower on their Artistic and Social competencies. The FOS group, on the other hand, was significantly higher than several other groups, i.e. more like the No Internal Barrier group. They did differ significantly from the Multiple Barrier group thereby demonstrating that although both manifest Fear of Success, the latter group faces a number of additional issues. The Enterprising competency rating seems particularly sensitive to the problems faced by the Low Self Esteem and

Table 22

Competencies of Internal Barrier Diagnostic Groups for Program and Control Cohorts

Diagnostic Group	Realistic	Investigative	Artistic	Social	Enterprising	Conventional
1. Non-assertive (N = 42)	1.71	5.45	4.48	7.50	3.83	2.55
2. Fear of Success (N = 56)	2.29	6.20	5.57	8.82	5.30	3.25
3. Low Self Esteem (N = 99)	1.57	5.13	4.70	6.82	3.47	3.32
4. Low Achievement Motivation (N = 36)	2.47	5.19	5.94	8.53	5.25	3.31
5. Multiple Internal Barriers (N = 12)	1.17	5.33	5.92	7.50	6.00	3.25
6. No Internal Barriers (N = 141)	2.11	5.82	5.83	8.82	5.71	3.60
Grand Mean	1.96	5.59	5.37	8.10	4.84	3.32
F Statistic	1.97	2.36*	2.86*	11.80***	10.79***	1.52

Key: * P < .05
** P < .01
*** P < .001

Non-assertive groups who are significantly lower on this attribute than all other groups.

Career Aspirations

The procedure employed to validate judgments made regarding guidance needs appropriate to the students' level of aspiration involved comparisons between the Hollingshead code for the first, second, and third occupational daydreams and prescription assigned. Thus, as Table 23 illustrates, those 68 students for whom a recommendation was made that they should be exposed to occupational alternatives were indeed higher on the Hollingshead classification (scaled from 1 high to 7 low). It will be remembered that this group contained those students who aspired to occupations requiring high ability and commitment who appeared not to have the requisite attributes. Correspondingly, those 60 students, for whom raising aspiration characterized the prescription, were significantly lower than the group (here labelled Other) for whom no aspirational issue was identified. The back-up alternative group and the group for whom aspirations were to be raised remained different from each other even on the second occupational daydream which went back into the young person's history, while those who had significantly lower aspirations than deemed appropriate maintained those lower aspirations in comparison to her peers. This pattern persisted for the third occupational daydream as well. Thus the SDS responses appeared to confirm the differences among the clinically prescribed groups.

Program Outcomes

Growth in Career Maturity and Overcoming Internal Barriers

While separate test scores provided measures of change on an instrument-by-instrument basis as a function of specific individualized features, it became apparent that global outcome measures were also

Table 23

Career Aspiration of Career Diagnostic Codes
for Program and Control Cohorts

	Occupation Level 1	Occupation Level 2	Occupation Level 3
1. Back-up Career Aspirations (N = 68)	1.49_a	2.03	1.93
2. Raise Career Aspirations (N = 60)	2.72_b	2.42_b	2.58
3. Multiple Aspirations (N = 5)	2.20	2.20	2.00
4. Other (N = 231)	2.00	1.99	2.06
Grand Mean	2.02	2.07	2.12
F Statistic	14.50***	2.56*	4.37**

Key: * $P < .05$
** $P < .01$
*** $P < .001$
a = significantly lower
b = significantly higher

essential to the evaluation process. Therefore, the Project Director and Manager rated each student who had pre- and post-test scores on a seven-point scale with respect to how much growth was judged to have occurred on career maturity and, for those so diagnosed, on the removal of internal barriers. Thus, the materials were examined over both pre- and post-assessment sessions and scores assigned reflecting whether the student had regressed markedly (score = 1) or had demonstrated remarkable growth (score = 7) at the extremes through a score of 4 representing no change. Figure 3 provides the histograms for the two growth distributions yielded from the program attenders and non-attenders ratings.

As will be recalled, the program cohort was divided into three groups in terms of degree of participation: a no participation group present at testing sessions only, a low participation group present for only one to four sessions, and a high participation group present for five or more sessions. Table 24 shows the growth on career maturity for all students and on Internal Barriers for those so diagnosed as a function of program attendance irrespective of group placement. As is clearly apparent, the high participation group made significantly more growth in overcoming internal barriers than either the no or low participation groups, and there is a trend in the direction of the low participation group over the no participation group as well ($P < .12$). Similarly growth toward career maturity is significantly in favor of the high participants ($P < .001$) who had a mean rating of 5.17 as compared with 4.07 for the lows and 3.87 for the no participant group. Thus on these two important outcome dimensions, global improvement as clinically assessed, the program participants surpassed the two peer groups.

Internal Barriers

Rating	
1. Regressed	4 + XX
2.	5 + XX
3.	19 + XXXXXXX
4. No Change	66 + XXXXXXXXXXXXXXXXXXXXXX
5.	51 + XXXXXXXXXXXXXXXXX
6.	31 + XXXXXXXXXXX
7. Maximum Growth	10 + XXXX
N = 186	(Each X = 3)

Career Maturity

Rating	
1. Regressed	3 + X
2.	9 + XXX
3.	31 + XXXXXXXXXXX
4. No Change	91 + XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
5.	80 + XXXXXXXXXXXXXXXXXXXXXXXXXX
6.	38 + XXXXXXXXXXXXX
7. Maximum Growth	14 + XXXXX
N = 266	(Each X = 3)

Figure 3

Histograms for Growth on Career Maturity and Internal Barriers for Program Cohort: Attenders and Non-Attenders.

Table 24

Growth on Internal Barriers and Career Maturity
by Program Participation

Program Participation	Mean Improvement on Internal Barrier Dimension	Mean Improvement on Career Maturity Barrier
1. No Participation (0 sessions)	4.03 (SD = 1.09) (N = 34)	3.87 (SD = .81) (N = 45)
2. Low Participation (1 - 4 sessions)	4.41 (SD = 1.29) (N = 75)	4.07 (SD = 1.15) (N = 100)
3. High Participation (5 or more sessions)	4.91 (SD = 1.16) (N = 77)	5.17 (SD = 1.03) (N = 120)
Grand Mean	4.55	4.53
F Statistic	7.13***	40.99***

*** <.001

Growth as a Function of Group Placement

It will be recalled that the evaluative design, by randomly assigning students to homogeneous and heterogeneous placement, permitted the examination of differential effects attributable to group assignment. Thus growth indices were compared for no, low, and high participants as related to homogeneous or heterogeneous group placement. As Table 25 shows, significant F values were reached in these comparisons.

In examining progress made by those with internal barriers, those in the high participant group under homogeneous placement made significantly more progress on the removal of their internal barriers than did any other group except the high participants under heterogeneous conditions. While there was a trend ($P < .08$) in the direction of the heterogeneously placed internal barrier students toward removal of barriers under the high participant condition, it did not attain the required level. In growth on career maturity, high participation (whether the Internal Barrier student was placed in a heterogeneous or homogeneous group) accounted for the difference.

For the No Internal Barrier group, the findings are less clear since there were only two students in the no participation homogeneous group and five students in the no participation heterogeneous group. However, high participation under both placement conditions resulted in significantly greater growth than did low participation. Indeed a comparison of no, low, high participation for all students ($N = 266$) on growth in career maturity yielded an omnibus F of 41.532 significant at better than the .001 level.

These findings seem to suggest that the individualized approach emphasized by group leaders was effective under both grouping strategies and that the crucial determinant was, in fact, attendance. There is a

Table 25

Summary of Growth Indices for Program Cohort

	IB Students' Growth on IB Dimension	IB Students' Growth on CM Dimension	NIB Students' Growth on CM Dimension
Homogeneous Group Placement			
No Participation	4.06	4.06	4.50
Low Participation	4.39	4.19	3.46
High Participation	5.00	5.19	5.05
Heterogeneous Group Placement			
No Participation	3.75	3.63	3.80
Low Participation	4.40	4.13	3.92
High Participation	4.63	5.00	5.46
F Statistic	2.66*	8.22***	6.85***

* <.05
*** <.001

suggestion that the removal of internal barriers was more effective under homogeneous conditions (mean 5.0 vs. 4.63) for the high participants. It is necessary, however, to examine the specific internal barrier groups with respect to their outcomes on the personality measures of interest as a function of participation.

Outcomes for Specific Diagnostic Groups

Because the N's were substantially reduced making many comparisons meaningless and since the homogeneous-heterogeneous group placement distinction was equivocal at best, it was decided to examine the separate diagnostic group outcomes in terms of participation rather than in terms of placement. Thus, those diagnosed as having, for example, low assertiveness were analyzed in terms of their post-test self esteem score covarying for pre-test score in terms of no, low, and high participation. Table 26 summarizes the results of the analyses of covariance performed for each specific internal barrier group on each relevant personality dimension for that group as related to the attendance factor.

It may be noted that the 4 no, 14 low, and 15 high non-assertive students were compared on the Self Esteem, M, M-F, Competitiveness, and Fear of Success measures as those had differentiated them from the others during the diagnostic phase. Higher self esteem scores tended to characterize the high participants ($P < .10$) and, indeed, the difference between the no participants and the high participants attained the .03 level of significance. Final scores on the M Scale were far more dramatic with the non-assertiveness high participants significantly higher than the no participants at better than the .001 level. To the extent that the Spence-Helmreich M Scale taps instrumental and agentic attributes, a gain here is an important outcome for these students. A trend is apparent ($P < .10$) in the comparison of the M-F final scores as this is purported to

Table 26

Summary of Adjusted Post-Test Means on Personality Dimensions
by Internal Barrier Group

	Non-Participation	Low Participation	High Participation	F Statistic	Significance Level
1. Non-Assertive Group					
Self Esteem (TSBI)	3.08	3.51	3.59	2.51	.10
Masculinity Subscale (PAQ)	2.89	3.55	3.68	7.77	.002
M-F Subscale (PAQ)	2.30	2.70	2.83	2.52	.10
Competitiveness (WFOS)	2.78	3.32	3.16	1.18	N.S.
FOS (Absent)	1.15	1.31	1.66	1.25	N.S.
2. Fear of Success Group					
FOS	.69	1.05	1.20	1.13	N.S.
Personal Unconcern (WFOS)	3.66	3.78	3.70	.10	N.S.
Competitiveness (WFOS)	3.35	3.38	3.29	.08	N.S.
3. Low Self Esteem Group					
Self Esteem (TSBI)	3.08	3.30	3.39	1.71	.18
Femininity Subscale (PAQ)	3.76	3.98	3.99	1.33	N.S.
Masculinity Subscale (PAQ)	3.24	3.42	3.39	.72	N.S.
M-F Subscale (PAQ)	2.59	2.50	2.59	.41	N.S.
4. Low Achievement Motivation Group					
Mastery	3.38	3.51	3.57	.38	N.S.
Work	4.29	4.31	4.15	.58	N.S.
Masculinity Subscale (PAQ)	3.55	3.76	3.92	1.60	N.S.
FOS (Absent)	.87	1.39	1.50	2.05	.15
5. No Internal Barrier Group					
Self Esteem (TSBI)	4.06	3.84	3.95	.93	N.S.
Masculinity Subscale (PAQ)	3.86	3.68	3.83	1.41	N.S.
Femininity Subscale (PAQ)	4.32	4.11	4.14	1.55	N.S.
M-F Subscale (PAQ)	2.88	2.74	2.93	1.79	.17
Work	4.49	4.54	4.50	.09	N.S.
Mastery	3.62	3.41	3.50	.68	N.S.
Competitiveness	3.69	3.43	3.55	.56	N.S.
Personal Unconcern	3.58	3.72	3.70	.21	N.S.
FOS (Absent)	.92	1.25	1.35	1.28	N.S.

be a measure of aggressiveness and lowered vulnerability to emotional sensitivity. As such the difference between the no and high participating non-assertive students did reach the .03 level of significance although the omnibus F showed merely a trend. Both Competitiveness and Absence of Fear of Success, while moving in the right direction (higher adjusted means for high participants), failed to attain significance.

The results for the Fear of Success groups (No = 13, Low = 22, High = 15) were disappointing as neither the FOS measure itself nor the PUN or Competitiveness scale adjusted means yielded significant differences. FOS did, however, show progression in the predicted direction. The intransigence of this characteristic is clearly apparent.

An examination of the Self Esteem groups adjusted means, while showing a trend in the direction of improvement for the high participation group, nonetheless fails to attain the required level of significance nor were differences found for the remaining scales: F, M, or M-F for the 10 no, 23 low, and 38 high participation groups.

In the case of the Low Achievement Motivation group, the only trend ($P < .15$) occurred in the comparison of adjusted Absence of FOS means for the 12 no, 13 low, and 7 high participants. In all other comparisons, Mastery, Work, and M, no significant differences were found. Unfortunately comparisons could not be undertaken for the Multiple Barrier group because of the very small number of individuals involved, i.e. only one no participant group member.

For comparative purposes, analyses of covariance were performed for all of the No Internal Barrier students (no = 10, low = 25, and high = 42) on all measures. Only on the M-F Scale was there a trend ($P < .17$) for the high participating No Internal Barrier students to attain higher scores than the low participant group. The mean values are only of interest as

they are compared with the Internal Barrier groups' final scores inasmuch as program objectives were in no way directed toward modifying the personal attributes of the No Internal Barrier group. Indeed their personal attributes appeared to remain stable over time and in almost all cases when compared with the Internal Barrier groups were in the more positive directions.

Outcomes for Occupational Aspiration Groups

Analyses of covariance performed on the post-test SDS Occupational Daydreams 1, 2, and 3 are presented in Table 27. For the 12 no, 28 low, and 43 high participants for whom back-up career aspirations were to be provided, no statistically significant lowering of Hollinghead levels occurred although the direction appeared to be appropriate, i.e. 1.45, 1.52, 1.65 in the first occupational daydream. For the group for whom a raising of career aspirations was the objective, only in the second daydream was a trend ($P < .16$) noted although the direction was a hopeful sign in all three instances, i.e. the high participants did appear to raise their aspirations to higher Hollingshead levels. Interestingly it was the group for whom no specific occupational aspiration objectives were established who manifested the greatest change in that there was a trend ($P < .11$) in occupational daydream 2 and a significant difference at the .05 level for occupational daydream 3 for the high participants to raise their occupational aspirations. The meaning of these increases is not entirely clear in terms of program influence on those who initially had aspirations that appeared to be appropriate to their abilities and interests.

Junior Class Comparison Group

As indicated earlier, a counselor nominated sample of junior class young women from 5 of the high schools where the talented sophomore program

Table 27

Summary of Adjusted Post-Test Means on Occupational Aspirations for Career Diagnostic Groups

	No Participation	Low Participation	High Participation	F Statistic	Significance Level
1. Back-up Alternative Group (N = 46)					
Occupational Level 1 (SDS Daydream 1)	1.45	1.52	1.65	.25	N.S.
Occupational Level 2 (SDS Daydream 2)	2.17	1.75	1.61	1.08	N.S.
Occupational Level 3 (SDS Daydream 3)	1.60	2.12	1.79	.87	N.S.
2. Raise Career Aspirations Group (N = 42)					
Occupational Level 1 (SDS Daydream 1)	2.54	2.87	2.28	.39	N.S.
Occupational Level 2 (SDS Daydream 2)	2.78	2.76	2.00	1.90	.16
Occupational Level 3 (SDS Daydream 3)	2.44	2.48	2.37	.04	N.S.
3. Maintain Career Aspiration Level (N = 143)					
Occupational Level 1 (SDS Daydream 1)	2.14	1.96	1.79	1.21	N.S.
Occupational Level 2 (SDS Daydream 2)	2.22	2.19	1.84	2.27	.11
Occupational Level 3 (SDS Daydream 3)	1.74	2.28	1.91	3.18	.05

invitees attended were tested in the Spring of 1977. While the selection process was significantly different and while they were a full year older, it was believed that this group would provide some useful comparisons with the program group in the Spring 1978 post testing. Improvement on the internal barrier dimension could, of course, not be undertaken for the prior existence of internal barriers among the 1977 juniors was unknown. However, certain career related measures could be compared. Table 28 provides these data where the Program Cohort is compared with the 1977 junior class from their same high schools. On occupational daydream 1, it may be seen that the high participant program group had a significantly higher level of aspiration than did the junior class contrast group at the comparable time in their high school career. For the second daydream only the no and low participants evidenced significantly lower career aspirations while the high participation group evidenced a trend ($P < .16$) toward significantly higher aspiration than the juniors. For the third daydream, the low participants differed significantly while there was a trend ($P < .17$) for the highs to differ from the juniors. Thus the program students in general appeared to have higher aspirations post program than did the junior class of 1977 at that same period in their secondary school careers.

The same comparisons were undertaken for final Holland SDS codes contrasting no, low, and high participants with the 1977 Juniors. Here we see that all three program cohort groups were significantly higher on the Realistic occupational code than were the 1977 Juniors from their schools while in the case of the Investigative code, only the low participants differed in being significantly lower. All three program cohort groups were significantly higher in the Artistic and Social occupational codes than were the 1977 Juniors while only the no and low participating program groups were significantly higher on Enterprising and on Conventional.

Table 28

Comparison of Program Cohort with Junior Class Contrast Group on SDS and External Barrier Variables

	Program Cohort			Comparison Cohort (N = 98)
	No Participation (N = 39)	Low Participation (N = 82)	High Participation (N = 81)	
SDS Occupational Daydreams				
Occupational Level of 1st Daydream	2.27	2.15	1.79**	2.2
Occupational Level of 2nd Daydream	2.48*	2.33**	1.79	1.93
Occupational Level of 3rd Daydream	1.91	2.40**	1.84	1.99
SDS Codes				
Realistic	4.0 ***	3.83***	3.29**	2.41
Investigative	6.94	6.45**	8.28	7.78
Artistic	8.45**	7.37*	8.45***	6.44
Social	11.33*	11.11**	11.14**	10.15
Enterprising	6.58**	6.83***	5.64	5.27
Conventional	3.88*	4.82***	2.85	2.43
Perceived External Barriers				
Career Related Problems	1.92	1.74**	2.19	2.06
Sex Discrimination Problems	1.65	1.48	1.74	1.59

* = P <.05
** = P <.01
*** = P <.001

This pattern of differences suggests that the Junior Class of 1977 differed significantly from the Junior Class of 1978 in Holland personality type irrespective of program exposure as was anticipated earlier when the method of selection was addressed. Their lack of comparability to any of the participant groups creates serious difficulty in sorting out the influence of the program on the Holland occupational typology.

The Junior Class of 1977 was utilized in one other pair of analyses, those related to perceptions of general career problems in the market place and to career problems related to sex discrimination issues. These two short checklists (see Appendixes E and F) were developed as part of the staff effort to tap increases in sensitivity to career related issues as a function of program participation. As Table 28 indicates, only the low participation group differed significantly from the juniors in the general career related problems checklist, whereas there were no significant differences on the sex discrimination problems checklist between the Program Cohort and the Junior Class of 1977. It is interesting to note, however, that the high participants did attain higher scores on these comparisons than did the other groups.

Evaluation of Program by Participants

The Relationship of Attendance to Overall Program Rating

In order to evaluate how helpful the program was perceived to be by the participants, it was recognized that attendance would need to be taken into account. Those who were turned off by the program in the early sessions would drop out, while those who persisted would become increasingly enamored. Such was, in fact, the case for the correlation between program rating on helpfulness and attendance was .46. Viewed another way, there was a statistically significant difference ($P < .001$) between the high and

low attenders' overall program rating on a 5-point scale from 5, very helpful, to 1, not at all helpful. The high participant group assigned a mean rating of 3.64 while the low attenders assigned a mean rating of 2.64 and showed greater variability in their responses.

There were a number of interesting school-by-school contrasts which these overall means obscure. Table 29 makes the point more clearly. Our holding rate was poorest in Parochial School I, the only setting where fewer persisted than dropped out. It was also located at the most distant point with poor public transportation to the University. There was a highly significant difference between the attenders and non-attenders in their evaluation of helpfulness nonetheless. As a group, these young women held very traditional values. Their interaction within groups comprised of those from other sectors with rather different orientations regarding women's roles was believed to produce some conflict for them. That the resistance of Parochial School I was not a function of religious orientation per se is demonstrated by the overall positive ratings assigned by Parochial School II participants where high attenders did not differ significantly from low attenders. Our success was deemed to be greater in Private School I as compared to Private School II, although the numbers were so small in the latter instance that the results are difficult to evaluate. Nonetheless, there is the suspicion that the more traditional values held by the young women in Private School II, like those of Parochial School I, provided less motivation for exploring future careers and may have created some conflicts that were handled through avoidance and, ultimately, denial.

In comparing the high and low participants' ratings in both Public School settings, significant differences may be noted. While our holding rate was considerably better in the public sector, proximity to the

Table 29

Differences between Low and High Participants' Helpfulness Ratings by School

School		High Participants	Low Participants	F Value
Parochial I	Mean	4.00	2.33	3.17**
	Variance	1.60	1.31	
	N	6	27	
Parochial II	Mean	3.93	3.38	1.28
	Variance	.78	1.41	
	N	15	8	
Private I	Mean	3.83	3.43	1.04
	Variance	.52	.95	
	N	12	7	
Private II	Mean	3.75	2.33	1.52
	Variance	.917	2.33	
	N	4	3	
Public I	Mean	3.78	3.0	2.26*
	Variance	.95	.89	
	N	40	10	
Public II	Mean	3.27	2.27	3.35**
	Variance	.90	1.21	
	N	41	15	

* = P <.05
** = P <.01

University and to public transportation also contributed. Program appeal was clearly greater in Public School I where a far greater readiness to deal with non-traditional issues prevailed. Thus, the program ratings by school appear to reflect the value differences described earlier which interestingly are not so much a function of school control as they are of the very different profiles of these six sites.

Reasons for Program Non-Attendance

Since participation is such an obviously critical factor if programs of this kind are to have a demonstrable impact, an open-ended question was included on the post test for the four attendance classifications: those who attended most, attended irregularly, attended a few sessions or attended not at all. Table 30 shows the grouping of the open-ended responses to this inquiry. Interesting differences among the groups are immediately apparent. The weather was the major factor for the high attenders while transportation and safety concerns contributed to the absence of those who attended irregularly. For those who attended only a few sessions, it was overwhelmingly boredom with the program or its failure to meet the student's expectations while for those who never attended, busy schedules and work demands were most frequently mentioned.

The realities of the program operation are certainly reflected in these responses and reflected differentially by group. A breakdown by school would further reveal that among those who attended a few times was a preponderance of Parochial School I students. Indeed, weather, transportation and safety were serious considerations which would be minimized if the program were conducted within the student's own high school. A major issue is, however, scheduling conflict for many of these young women maintained heavy work schedules (some worked as many as 30 hours a week), were involved in sports teams and theatrical productions, and had

Table 30

Students' Reasons for Program Absence by Level of Participation (by Percentage)

	Attended Most (N = 100)	Attended Irregularly (N = 41)	Attended Few (N = 82)	Never Attended (N = 44)
a. Conflict with work schedule	11.0	26.8	12.2	31.8
b. Conflict with academic load	7.0	14.6	2.4	11.6
c. Conflict with extra-curricular activity	13.0	14.6	12.2	16.3
d. Transportation problems/ nature of neighborhood	20.0	39.0	23.2	4.7
e. Weather (snow days)	51.0	34.1	3.7	-
f. Illness (Dr.'s appointment)	20.0	17.1	2.4	-
g. Bored with program/unful-filled expectations	8.0	14.6	62.2	9.3
h. Personal reasons; busy schedule	25.0	26.8	23.2	44.2
i. Inappropriate response/ "I attended every session"	1.0	-	-	2.3
j. Conflict with avocational/ community related activity; hobbies	-	2.4	2.4	16.3
k. Conflict with family responsibilities	6.0	-	2.4	2.3

heavy academic responsibilities as well. While certain of these issues would be minimized if the program were conducted within the home school, experimentation with other time slots - summers, evenings, in-school time - is worthy of consideration.

Perceived Gains from Program Participation

The students were asked to respond to the question, "What do you feel you have gained from participation in the program?" These responses were grouped but not broken down by actual participation as Table 31 shows. The most frequent response had to do with gaining a greater awareness of a variety of career opportunities. The next most frequent response was related to better direction in career choice, followed closely by gaining a better knowledge of self. Twelve percent of the responses had to do with learning more about college selections, and almost as many mentions of learning new ideas and perspectives about women's issues were tabulated. It is obvious that the non-attenders or those who attended only a few sessions indicated that they had gained nothing from the experience.

Student Recommendations for Future Programs

It was believed that further insight could be gained by securing comments and suggestions from the students regarding program improvement. The following open-ended question was posed, "What recommendations or suggestions would you make for future Project Choice programs based upon your experience?"

Table 32 summarizes the global responses not differentiated by participation. More individualized attention, a better location, and more career information were among the more frequent suggestions. Shortening of length of sessions, providing earlier periods of time in the career lab were additional helpful comments. A number of comments

Table 31

Student Perceived Benefits from Program Participation
(by Percentage)

	Mentioned by Student	Not Mentioned by Student
a. Greater awareness of variety of career opportunities	28.5	71.5
b. Meeting new people	6.0	94.0
c. Better knowledge of oneself	17.5	82.5
d. Knowledge that college is possible given financial aid options	5.0	95.0
e. Better knowledge of colleges and process of college selection	12.0	88.0
f. Awareness of need to make career choices	4.5	95.5
g. More in-depth knowledge of specific careers	7.0	93.0
h. Greater awareness of personal interests	4.5	95.5
i. Greater awareness of abilities/potential	5.5	94.5
j. Greater awareness of values, satisfactions	1.5	98.5
k. Greater self confidence	5.0	95.0
l. Greater confidence regarding career choice	8.5	91.5
m. New ideas, perspectives on women's issues	11.5	88.5
n. Better idea/direction in terms of career choice	18.0	82.0
o. Awareness of others' concern and willingness to help	1.5	98.5
p. General positive	6.0	94.0
q. Gained everything imaginable	.5	99.5
r. Gained nothing	17.0	83.0
s. Awareness of pre-post changes	1.5	98.5
t. None, or "I do not know."	6.0	94.0

Table 32

Students' Recommendations for Future Project Choice Programs
(by Percentage)

	Increase	Same	Decrease	Change
a. Transportation	4.1	-	-	.5
b. Location of program	11.4	-	.5	1.6
c. Group discussions	2.6	-	4.7	6.2
d. Process activities ("Games")	2.1	-	3.1	.5
e. Grouping patterns (i.e. group students by career interests, age)	2.6	-	.5	2.1
f. Time in the career information lab	4.7	-	.5	.5
g. Scheduling (time of day/week/year)	5.7	-	-	9.3
h. Session length	.5	-	8.8	.5
i. Number of sessions	1.6	-	4.1	-
j. Role model experience	5.7	1.0	-	.5
k. Self awareness activities	.5	.5	3.1	-
l. LWP skills (such as goal setting, decision-making/life work planning	-	-	2.1	-
m. General career exploration	5.7	-	-	-
n. Women's issues	.5	-	1.6	-
o. College related activities (selecting a college, financial aid, etc.)	9.8	-	-	-
p. Individual attention	14.0	-	-	-
q. Job hunting skills - resume writing/ interviewing	1.6	-	-	-
r. Group attendance, participation of group members	2.1	-	-	1.0
s. Specific career information	10.9	-	1.0	.5
t. Career information workshops	7.3	-	-	1.0
u. "I do not know"	2.6	4.7	-	-
v. General, Positive response	1.6	4.1	-	-
w. General, Negative response	1.5	.5	.5	6.2

were directed at time and scheduling issues, particularly from those participants who rushed out of school at the end of the day, rode the bus for upwards of a half hour, spent two hours in their group, and then had to face the long ride home and a full evening of academic, work and family responsibilities. Conduct of the program at the school site would eliminate a number of these kinds of problems.

Program Participants' Ratings of Individual Session Activities

In an effort to evaluate the specific components of the Project Choice Career Development Program, at the post-test session all students who participated in any segment were requested to rate the various activities on a five-point scale ranging from very helpful to not at all helpful. The analysis of these data was undertaken by comparing the responses of the low participants to the high participants on each activity as Table 33 shows. In almost all instances the high participant group gives numerically higher ratings to the activities. The exceptions are on Activity 8, Individual Role Model Visits; Activity 9, Lifestyle Patterns of Women; Activity 10, Discussions on Issues in Women's Socialization; and Activity 17, Financial Aid Information. There was only one comparison, however, that actually reached statistical significance and that was on Activity 4, Goal Setting, which was in the predicted direction, i.e. the program high participants rated it significantly higher than did the low participants. Several other comparisons approached statistical significance yielding trends at the .07 and .08 levels respectively for Activity 2, Card Game of Life Experiences, and Activity 15, Decision Making, again in favor of high participation preference.

It will be noted that the N's for the low participant group are small by definition as they experienced little of the program as it progressed. There is even some question regarding their higher rating of

Table 33

Means, Variances, and Significant Differences between High and Low Program Participants on Individual Session Activities

Activity		Low	High	Test Statistic	Significance
1. Getting acquainted	Mean	3.4337	3.6491	-1.2318	.2195
	Var	1.7120	1.2917		
	N	83	114		
2. Card game of life experiences	Mean	2.6765	3.0526	-1.7842	.0763
	Var	1.8042	1.7312		
	N	68	95		
3. Printed information: women and work	Mean	3.5938	3.8073	-1.1788	.2401
	Var	1.5784	1.1755		
	N	64	109		
4. Goal Setting	Mean	3.1964	3.7000	-2.5795	.0108**
	Var	1.9789	1.1294		
	N	56	110		
5. Career workshop: women from different career fields	Mean	4.3000	4.3956	- .4170	.6775
	Var	1.0632	.8195		
	N	20	91		
6. Career information workshop: post-secondary education	Mean	3.8889	4.1475	- .6420	.5230
	Var	2.1111	1.1612		
	N	9	61		
7. Career and college information labs	Mean	3.3529	3.7474	-1.2584	.2109
	Var	1.4926	1.4036		
	N	17	95		
8. Individual role model visits	Mean	4.7143	4.3269	.8883	.3781
	Var	.2381	1.2832		
	N	7	52		
9. Lifestyle patterns of women	Mean	3.2222	3.4884	- .5527	.5830
	Var	2.4444	1.5891		
	N	9	43		
10. Issues in women's socialization	Mean	3.7273	3.4242	.9225	.3592
	Var	1.4182	.9557		
	N	11	66		
11. Redoing Holland Occupational Code	Mean	2.7727	2.7879	- .0531	.9577
	Var	2.3745	1.2709		
	N	22	99		

Table 33
(Continued)

Activity		Low	High	Test Statistic	Significance
12. Self assessment of personal interests and satisfactions	Mean	3.3125	3.6944	-1.3108	.1924
	Var	1.4292	1.1488		
	N	16	108		
13. Self assessment of abilities	Mean	3.4000	3.7791	-1.1804	.2407
	Var	1.5429	1.2800		
	N	15	86		
14. Project Choice career model	Mean	2.7778	3.0678	- .7215	.4732
	Var	1.6944	1.2022		
	N	9	59		
15. Decision making	Mean	2.8235	3.3958	-1.7604	.0811
	Var	2.1544	1.4206		
	N	17	96		
16. Criteria for college choice	Mean	3.6000	3.9780	- .9889	.3251
	Var	1.3778	1.3106		
	N	10	91		
17. Financial aid information	Mean	4.1429	3.8077	.7218	.4725
	Var	.4762	1.4560		
	N	7	78		
18. Job hunting, interviewing and resume writing	Mean	3.6667	3.8857	- .4420	.6597
	Var	1.4667	1.3491		
	N	6	70		

** < .01

the Role Model Experience since it is unlikely that the low participants were present at the advanced point in the Program when such assignments were made. The seven students in question may, therefore, have been responding to the attractiveness of that feature whether they actually participated or not.

The mean ratings of the individual activities are instructive in pinpointing those activities more or less valued and as such guided revisions incorporated into the final revision of the Project Choice Handbook. One particularly striking feature of Table 33 is the considerable variability of responses to given activities, which represents quantitative confirmation of impressions group leaders received on a week-by-week basis, i.e. the same activity could be perceived by some students as the most rewarding experience ever and by others as a crashing bore. The Card Game of Life Experiences was such an activity wherein it was either loved or hated (variance high participants = 1.73). The Card Game, an exercise involving rethinking the Holland Occupational Code (Activity 11) and the didactic discussion about the Project Choice Model (Activity 14), were the lowest rated activities falling at the midpoint or below on the 5-point scale. At the other end of the scale was the Career Information Workshop with representative women from a variety of fields (Activity 5) which received a mean rating from high participants of 4.4 and from low participants of 4.3; the individual role model visitations (Activity 8), high participants 4.3, low 4.7; and the workshop on post-secondary opportunities and financial aid, high participants 4.1, low 3.9. With the few exceptions noted, it is clear that the individual activities were perceived as helpful by those who participated and interestly enough those experiences where the maximum amount of specific career information was presented consistently yielded the highest ratings, including the

informational and statistical handouts (Activity 3) which apparently were read outside of session meeting times.

In general and contrary to expectation, these talented young women did not resist cognitive material nor view it as duplicative of school work. Rather, they appeared to be challenged to acquire specific information and, if anything, found the affective components less engaging. Reactions to those group process experiences involving self evaluation of abilities, attitudes, and values, and exploration of women's issues on an affective level were places where, it is believed, some attrition occurred among those who were not yet emotionally ready to deal with the personal threat that these issues could represent. It is, therefore, the conclusion of Project Staff that a reordering of activities should be field tested reversing components in a sequence starting with a heavy cognitive emphasis and then progressing to the more affective explorations after a greater sense of comfort has been established. Given the wide range of individual differences among the talented, it is believed that this approach would be safer as there are many young women grappling with the adolescent passage throug denial and flight. To increase the holding power for these persons, an approach that is perceived as cognitive during the initial stages at least, will be far less threatening and ultimately far more helpful in preparing them to face the issues themselves if they are not frightened at the outset.

Contributions of School Guidance Counselors

The Guidance counselors from the cooperating high schools served several important functions in the conduct of the Project and in its validation. In reciprocation, Project Staff took seriously the obligation to keep the counselors well informed, remain open to all suggestions, and contribute in some measure to the professional growth

of the counselors themselves. Several luncheon workshops were held for this latter purpose and although more were planned, weather and constraints on the counselors' work schedules interferred with carrying them out although informal on-site conferences were substituted.

The first workshop was organized following a mail survey of the kinds of topics the counselors wished to have emphasized. Skill building in Life Work Planning was the most frequently chosen item in addition to their request for more information regarding the Project itself. The workshop involving 11 counselors was most favorably received, for on a 7-point scale (1 low to 7 high), no rating was lower than 5 with a mean of 5.3. The counselors appreciated the opportunity to interact with their peers, share ideas and resources, and become better informed about the Project and its progress.

The second workshop for counselors was even better received, yielding a mean rating of 6.25 as a reflection, no doubt, of more complete reporting about the program specifics and direct information on "Finding Sumner Jobs and Writing Resumes". Such comments as "The best of our meetings," "I felt we were <u>involved</u> in the project, not just 'feeder schools'," and ". . . The expertise and enthusiasm of the faculty/staff is exceptional and exciting," were most gratifying. It was clear that the counselors viewed the effort as an important resource and were committed to it. Such commitment was evident not only in the graciousness with which requests for test information and pre- and post-test scheduling were expedited, but also in the way in which the counselors cooperated in the completion of validation procedures involving them directly.

The first of these procedures involved determining the percentage of agreement between Project Choice talent identification methods and counselor perceptions of the accuracy of those individuals selected for

program participation. Lists were therefore generated for each school and the counselors were requested to rate each individual under the following instructions:

> The following students from _____ High School have been selected for the special Case Western Reserve University Career Education Project. In our judgment, they manifested talent in any one or more of the following areas: general academic, mathematical, musical, artistic, athletic, leadership, and/or the performing arts. We are interested in whether or not you agree with our choices. Please rate each of the students in terms of whether you strongly agree, agree, are undecided, disagree, strongly disagree or have insufficient information regarding the selection. Please encircle your judgment for each student.

Table 34 shows distribution of ratings by school and the percentage totals across the six categories. Combining the strongly agree and agree categories yields an 86.5% agreement on selection while there was disagreement or uncertainty for only 4% of our selections. The combined insufficient information or no response categories occurred for almost 10 percent of the choices. It must be noted that the Project staff had much more aggregated information than did the counselors including evidence regarding out of school activities about which the counselors would have no data whatever. In addition, in large high schools it is, of course, virtually impossible for counselors to be that familiar with each individual. This would argue for the use of a Talent Inventory of the type developed for Project Choice which would provide at a glance evidence of activities not ordinarily known by the counselor. Thus, for some instances where the counselor disagreed or was uncertain regarding staff selections, the discrepancy could very well have been a function of lack of information. For others, we believe certain biases may be operating when young women are not using their potential as perceived by counselors, i.e. the underachieving syndrome or when the individual manifests certain characteristics not viewed as desirable by the counselor which may override the positive

Table 34

Counselor Agreement Ratings with Staff Selections of Talented

Schools	Total N	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	Insufficient Information	No Response
Parochial I	56	46% (26)	50% (28)	2% (1)	2% (1)	0	0	0
Parochial II	35	94% (33)	0	3% (1)	0	0	0	3% (1)
Private I	21	62% (13)	0	10% (2)	5% (1)	0	24% (5)	0
Private II	14	57% (8)	14% (2)	14% (2)	0	0	14% (2)	0
Public I	77	43% (33)	42% (32)	0	3% (2)	0	13% (10)	0
Public II	86	58% (50)	29% (25)	1% (1)	0	0	0	12% (10)
Grand Totals	289	56.4% (163)	30.1% (87)	2.4% (7)	1.3% (4)	0	5.9% (17)	3.8% (11)

attributes. A summary check list would be of material benefit in objectifying the talent assessment, thereby reducing the operation of selection bias as well as information gaps.

A second major contribution made by the counselors to the validation process centered on the manual itself. The counselors were requested to use a 5-point rating scale in assessing the manual on the following criteria:

1. The contents of this manual are relevant to the needs of my own students.
2. The manual's format makes it very easy to use.
3. The materials presented in this manual are directly applicable to my own students.
4. The workshop materials provided give clear, step-by-step directions on how to conduct a career workshop.
5. The sessions are presented in a clear, easily applied manner.
6. The subgroups are presented in a clear, easily applied manner.

Each rated item provided additional space for comments; three qualitative items were also included:

7. The feature of this manual that I like best and find most helpful is
8. The feature of this manual that I like least and find least helpful is
9. Recommendations:

As there was almost no variability in responses, the analysis of the counselors' ratings of the manual will not be presented in tabular form. The unanimity of the counselors in their enthusiasm for the manual was indeed heartening to the staff. Because of the closeness of the relationships, one cannot be certain whether or not the counselors wished to avoid hurt feelings although names were deliberately not requested on the reaction sheets. As the counselors had been candid in the past, we concluded that

the reactions were another indication of the rapport which had developed and that there was genuine praise for the materials themselves.

All agreed that the contents were very relevant to the needs of their students. One typical comment was, "I am presently in charge of setting up a Senior work experience project for next year's Seniors and will be grateful many times over for some units and plans which can be used to motivate and direct some thinking and searching on their part before opting for a specific work place."

The only item that received less than a 1 rating was the second item having to do with the ease of use. One said, "Actually the format is excellent . . . I was just slow in putting it in a binder." Another suggested that it be published with dividers and, indeed, this is precisely what the publisher has informed us will be done.

There was again unanimity on the applicability question, a sample comment being, ". . . not only applicable but crucially needed." Several comments related to implementing the workshops; while very complimentary, the counselors also highlighted the need for those undertaking that component to make special note of the "hazards". All praised the clarity of the sessions themselves and the special sub-group presentations.

In response to the request for indicating what features were liked best and deemed to be most helpful, several comments will be illustrative:

"The process materials and interventions are excellent. The book is adaptable to various group clusters. Color coding the sections is most helpful. Organization - excellent."

"The organization is excellent. Goals are clearly defined. Methods are clear and concise."

An examination of those features liked least, and found to be least

helpful, reveals that several were a bit overwhelmed by the enormity of the undertaking. Others felt that separation of units would make it easier to keep one's place. The publisher will be inserting separators between sections which should alleviate that problem.

There were few additional recommendations as most counselors used the opportunity for praising the project, product, and staff. Aside from encouragement regarding dissemination efforts, one counselor suggested training counselors through demonstrations by project staff in the belief that such in-service efforts would provide the basis for greater transportability. As all of the comments were most laudatory, the test will, of course, be a long range follow-up designed to determine the uses made of the materials and suggestions based on experience with implementation.

Conclusions

In an effort to summarize the major findings related to the program and its outcomes in as succinct a form as possible, the section which follows will enumerate the highlights serially.

1. Talent identification is feasible, particularly for large high schools, through the use of operationalized criteria entered on forms specifically designed for these purposes. The Talent Inventory and the accompanying Rating Sheet will permit counselors to identify talented young women in academic and non-academic areas more efficiently and with far less loss and bias occurring than through traditional nomination procedures.

2. There is considerable enthusiasm among parents for programs which will assist their talented daughters to make wise career decisions. In all socio-economic sectors, albeit for varying motives, parents have an increased recognition of the life style differences predicted for their daughters in adulthood as compared with their own. This does not imply that sex-role stereotypic expectations are not alive and well, but rather that receptivity to career education is growing among parents as a function of the realities of the last quarter of the Twentieth Century.

3. At the risk of reiterating truisms, there are extraordinarily great individual differences among tenth grade young women. Patterns of talents do appear to differ among high schools making value emphases identifiable -- performing arts, academic accomplishment, athletics are differentially prominent. Thus social context becomes a powerful determinant of the manifestation of talent.

4. Once again, it has been demonstrated that correlation rather than compensation is the rule, i.e. the talented tend to be multiply talented; the musician is the leader and top tennis player. This would suggest that based on abilities, the talented have many more career choices, conflicts, and career guidance needs than their less talented peers.

5. While differences among talented young women are demonstrable, the similarities are equally striking in a number of comparisons, most particularly in racial and socio-economic background factors. Individual and school differences seem to be far more prepotent for pinpointing career guidance needs than are family background factors per se.

6. The critical differentiating features appear to lie in the value domain but surprisingly not as a function of school control per se. Thus, evidence of a stronger traditional value orientation toward the roles of women was found in one of the public schools, one of the private schools, and one of the parochial schools rather than concentrated in one school control sector.

7. As underscored by all who work with adolescents, the task of guidance at this stage is not an easy one. Aside from the more complex issues having to do with personality dynamics, certain general characteristics make program implementation particularly difficult, perhaps as a reflection of the larger culture of which they are a part and the powerful peer culture as well. Included here are the desires for quick answers to complex questions, impressionability that seeks glamour and entertainment, intolerance for ambiguity, and escape into fantasy and denial. Thus role models who were presenting some harsh realities were rejected and charismatic individuals won new recruits instantly as in the case of a charming urban planner who increased the aspirants to her field ten-fold.

8. That talented young women can be influenced in powerful ways is a certainty and that the direction can be positive or negative is an equal certainty. The role of parents is extraordinarily clear and their need to develop an informed perspective must be underscored. Role models can be most effective as well. One of the most gratifying aspects of Project Choice was the overwhelming eagerness on the part of over 100 professional women within and outside of their professional organizations to volunteer for participation. This suggests an important resource that can be tapped in all communities and can have a powerful impact if used with diplomacy and wisdom. Role models remain the most effective way of exposing talented young women to non-traditional careers and alternative life styles, a particularly essential experience for the math talented group.

9. The outcome of research and evaluation efforts are heavily dependent upon the quality of instrumentation employed and, thus, instrumentation continues to be a serious issue. While compendia of suitable instruments are now available, the critical tests of validity, reliability, sex and culture fairness, ease of administration, and economy remain. Underlying these concerns are the poorly understood theoretical issues regarding women and careers. While we believe our decisions to use the Spence-Helmreich personality measures and the Horner cues for Fear of Success were appropriate at the time, the psychometric properties of these measures, as we later came to examine them through our data, gives some pause for concern. The question becomes one of sorting out whether their failure to discriminate as well as had been hoped was a function of their limitations or of the naivete of theory development to this point. While the Holland Self-Directed Search is not without its problems, it did provide useful data for our purposes

although one hopes that more sex equitable career development indices will soon be marketed. Our own crude attempt to pinpoint issues in sex discrimination and work-related problem areas was disappointing, but as a first try may merit further refinement.

10. The distinction between internal and external barriers, while making logical sense, appears in the final analysis to be a far more complex issue than it at first seemed. Even an item like financial resources, a seemingly straight-forward external barrier, proved to have some psychological overtones when we probed our very affluent young women who had checked the need for financial aid. We discovered that finances as an issue in dependency were indeed a problem for them. Thus while on the face of it, for the upper-class families, finances did not represent an external barrier; for the daughters it became an internal barrier as they sought to separate from their parents. We have once again learned a lesson in phenomenology; it is the personal meaning that the issue holds for the individual rather than the objective features which determine psychological significance.

11. Valid diagnoses of barriers to the fulfillment of potential can be established through the use of questionnaire data and test scores. The clinical assessments of low self esteem, non-assertiveness, fear of success, and low achievement motivation as well as career aspiration level incongruities were empirically verifiable. Each troublesome issue had well defined features setting it apart clinically such that those with assertiveness conflicts looked quite different from those dealing with achievement motivation questions.

12. The program was differentially effective with the various groups in that we were most successful in assisting the non-assertive group who couldn't say no to us either and attended faithfully. We were

least successful with the low achievement motivation group who, further validating our diagnosis dropped out.

13. The expectation of being able to intervene successfully in the personality dynamics of adolescent young women over a short period of time was an overly ambitious one. That some modest progress was made is obvious; however, altering motives related to the consequences of success and failure requires a far better theoretical understanding over a longer time span than was available.

14. The homogeneous vs. heterogeneous grouping issue was not clearly resolved largely because situational factors -- weather and transportation -- caused heavy subject attrition. Thus the experimental design demanded larger cell sizes than were available. There was, however, some reason to believe that individualization can be effective using either format and that a mix of students influencing each other is yet another powerful instrument in behavioral change. The special group interventions were not pure nor were the regular groups uncontaminated inasmuch as the group leaders worked so closely together in the planning and revision phases that many strategies were introduced into groups for which they were not originally intended. To the extent that replicability in the average high school is the desired goal, it is well that we tested a more comprehensive core program rather than more esoteric versions for which the interested guidance counselor would not find time nor energy.

15. An analysis of the session by session evaluation as well as overall ratings and comments by program participants supports the inference of Project staff that beginning with a more cognitive approach emphasizing career information before dealing with issues about the self and women's roles is a less risky approach. Thus trust can be firmly established before culture shock and reality conflicts are introduced.

The field test did involve transportation to a university and mixing with a variety of persons from different value orientations. While this was a most beneficial experience in many ways, it was not without its hazards nor artificialities. The sensitive counselor working in her/his own environment would be alert to the readiness levels and tempo required for his/her school setting and some of these field test difficulties will, therefore, not occur when the program is used elsewhere.

16. Scheduling sessions and workshops for talented young women will by definition present time conflicts because their lives are so very full. Some alternate schedules were suggested earlier. It should be kept in mind that on-site program arrangements will assist in overcoming a number of the obstacles the field test encountered, but not all of them. Work schedules, academic, co-curricular and extra-curricular responsibilities will interfere to a greater or lesser extent unless time is provided during the school day with Summer or weekends as other alternatives. For some, over-scheduling of activities is a useful defense against having to deal with issues about planning for the future and they will try to handle them by continuing to run. It is believed that timing is a critical variable and while career education is best started early, the Project Choice program has its greatest saliency the closer it comes to the time when decisions must be made. There would seem to be merit therefore in testing the program as close as possible to the Senior year in high school if not during the first six months of the Senior year when grappling with these issues can scarcely be avoided.

17. In many ways the evaluation approach used to test program effectiveness was not entirely satisfactory. The clinical assessments on growth in career maturity and growth on the overcoming of internal barriers came closest to tapping overall change. The univariate

statistical analyses on a variable by variable basis could not capture the aggregated changes. What is required for evaluation of an all encompassing effort of this kind is a multivariate model which would provide a more adequate test. It is hoped that future research with the data using multivariate statistics will demonstrate the kind of effectiveness yielded by the growth ratings.

18. Evaluation of program effectiveness is a long term question. There was evidence that even the passage of a few short weeks could spell the difference in altering perceptions. An activity which at the time seemed pointless would over the passage of several sessions suddenly take on real meaning for a given participant. Thus the ultimate test of program effectiveness will occur in one year, five years, or ten or more. There is already informal evidence that the impact of the program is just now being felt as we learn of some of the college decisions made by the program cohort this winter.

19. Some limitations of the present undertaking were a function of institutional constraints over which no project control was possible. Ideally the experimental design required random assignment of the talented into treatment and control groups. This was not possible under the conditions imposed by the cooperating schools so that naturally occurring controls as a function of participation were used as was a Junior class of 1978 for comparison purposes. These were not entirely satisfactory procedures. Interference of weather and unsatisfactory University facilities for group work were additional obstacles to an ideal field test.

20. Nonetheless, on balance as a pioneer effort in career programming for talented young women, there is considerable reason for optimism. A great body of data regarding talent in young women has been collected.

A program has been created which appears to be effective and was well received by participants and their counselors who believe it to be transportable. Yet a great deal remains to be done: To learn -- to test -- to apply in ways that can make a real difference in the lives of talented young women whose challenges in the years ahead deserve the best we can offer in guidance and education.

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APPENDIX A

Talent Criteria
for
Diagnostic Profile Ratings

PROJECT CHOICE

Name_____

CRITERIA FOR DIAGNOSTIC PROFILE RATINGS

Talent Dimension	Rating Criteria
1. Aptitude. a. IQ--WISC, Binet, Henmon-Nelson, etc. b. Verbal Ability. c. Numerical Ability.	Quotient score (IQ, EQ, PLR, etc.). 5 = 132 and above. 4 = 116 - 131. 3 = 100 - 115. 2 = 84 - 99. 1 = 83 and below.
2. Achievement--Standardized Tests. a. English. b. Mathematics. c. Science.	Percentile score (national). 5 = 90th % and above. 4 = 75th - 89th percentile. 3 = 50th - 74th percentile. 2 = 25th - 49th percentile. 1 = 24th % and below.
3. Achievement--Grades. a. English b. Mathematics. c. Science.	Grades. 5 = A (including A+ and A-). 4 = B+ 3 = B (including B-). 2 = C (including C+ and C-). 1 = D or F.
4. Grade Point Average.	Grade point average. 5 = 3.75 - above. 4 = 3.5 - 3.74. 3 = 2.75 - 3.49. 2 = 1.75 - 2.74. 1 = 1.74 and below.

Talent Dimension	Rating Criteria
5. Leadership. High-level office/leadership position. Class officer. Student Council officer. Publication editor. Team captain. Chairperson of group. Minor office/leadership position. Gym aide or leader. Teacher's or coach's assistant. Captain of gym class team. Informal leadership. Student influences and leads others although does not hold an official office or leadership position.	--- Considering all offices or leadership positions held by the student, assign the rating of this dimension as follows: 5 - Student has held an office or a leadership position of a state or national organization, group, or team. --OR-- Student has held several high-level offices and has received several awards for leadership. 4 - Student has held two high-level offices and several minor leadership positions. 3 - Student has held at least one high-level office and either has held one or two minor leadership positions or has demonstrated much "informal" leadership ability. 2 - Student has held one or two minor offices and demonstrates "informal" leadership ability. 1 - Student demonstrates some "informal" leadership ability.

Talent Dimension	Rating Criteria
6. Home-Related. Examples: Cooking, gardening, carpentry, landscaping, sewing, needlepoint, house painting, cleaning, etc.	--- Considering all home-related activities of the student, assign the ratings of the dimension as follows: 5 - Student has received state or national recognition for achievements in one or more home-related activities. 4 - Student has received school or community recognition for achievements and either holds an office in an organized group or spends more than 20 hours per week in home-related activities. 3 - Student is involved in two or more home-related activities and spends 20 hours per week in those activities. 2 - Student is involved in two or more home-related acitvities and spends 10 - 20 hours per week in those activities. 1 - Student is involved in one or more home-related activities but spends less than ten hours per week in those activities.

Talent Dimension	Rating Criteria
7. Athletic. Examples: Cheerleading, sailing, martial arts, lacrosse, backpacking, basketball, synchronized swimming, etc.	--- Considering all athletic activities of the student, assign the ratings of this dimension as follows: 5 - Student has received state or national recognition in one or more athletic activities. 4 - Student has received many school or community awards for participation on varsity or club teams or tournament circuits or has held positions of leadership. 3 - Student is a member of two or more formally organized teams and either spends more than 20 hours per week in athletic activities or achieves school awards for participation or placing in competition. 2 - Student is involved in two or more athletic activities and spends 10 - 20 hours per week in those activities. 1 - Student is involved in one or more athletic activities but spends less than 10 hours per week in those activities.

Talent Dimension	Rating Criteria
8. Community Involvement. Examples: Church-related activities, community fund raising or volunteer work, political campaigns, special interest group activities, etc.	--- Considering all community-involvement activities of the student, assign the ratings of this dimension as follows: 5 - Student has received state or national recognition for involvement in community, state, or national group(s) or organization(s). 4 - Student has received school or community recognition or has held high-level offices in formally organized groups; hourly involvement per week more that 20 hours. 3 - Student has been involved in community activities for 10 - 20 hours per week. 2 - Student has been involved in one or more community activities for 5 - 10 hours per week. 1 - Student has been involved in community activities for less than 5 hours per week.

Talent Dimension	Rating Criteria
9. Employment. Examples: Waitress, service station attendant, instructor, city employee, etc. Also sale of visual arts products, etc.; see note below. Note: Summer employment must be prorated for the entire year. A student employed for 30 or more hours per week in the summer only is not rated a "5". Emphasis is placed on employment throughout the year. Additional consideration should be given when activities in other talent areas result in student receiving financial reward.	--- Considering all activities for which the student receives wages or financial remuneration assign the ratings of this dimension as follows: 5 - Student has been employed for more than 30 hours per week or has demonstrated entrepreneurial creativity by forming own business. 4 - Student has been employed for 21 - 30 hours per week or has received special recognition. 3 - Student has been employed for 11 - 20 hours per week. 2 - Student has been employed for 5 - 10 hours per week. 1 - Student has been employed for less than 5 hours per week.

Talent Dimension	Rating Criteria
10. Literary Arts. Examples: Writing of short stories, poems, essays; working on publication staff such as school newspaper; etc.	--- Considering all literary art activities of the student, assign the ratings of this dimension as follows: 5 - Student has published in state or national publication or has published own work, or has won state or national essay contest. 4 - Student has published in school or community publications and either has received awards or recognition or has held a leadership position. 3 - Student writes for school publications and spends more than 10 hours per week in literary activities. 2 - Student writes for own satisfaction and spends 5 - 10 hours per week in such writing activities. 1 - Student spends less than 5 hours per week for own personal satisfaction.

Talent Dimension	Rating Criteria
11. Visual Arts. Examples: Painting, sculpting, macrame, rug hooking, photography, jewelry making, candle making, etc.	--- Considering all visual art activities of the student, assign the ratings of this dimension as follows: 5 - Student has won an award or recognition at a state or national showing of art work. 4 - Student has won awards or recognition at school or community exhibitions or has sold art work at community exhibitions; students evidence heavy time commitment to such activities. 3 - Student spends 11 - 15 hours per week in a variety of arts and crafts activities; student may have sold some craft work. 2 - Student spends 5 - 10 hours per week in two or more visual arts activities. 1 - Student spends less than 5 hours per week in one or more visual art activities.

Talent Dimension	Rating Criteria
12. Academics. Examples: Tutoring, participating in French Club, debating team, student council, etc. Note: Hours spent reading or doing homework are not included.	--- Considering all of the student's academic activities, assign the ratings of this dimension as follows: 5 - Student has won a state or national award in an academic contest or test or has been the member of a state championship team (debate team, etc.) 4 - Student has won a school or community award in an academic contest and/or holds a high-level office in an academic club or team; student evidences heavy time commitment to such activities. 3 - Student is a member of two or more academic clubs and has consistently received school awards for general academic performance (Honor keys, Honor Roll, etc.). 2 - Student is a member of two or more academic or special interest clubs (chess club, French club, etc.). 1 - Student is involved in at least one academic or special interest club.

Talent Dimension	Rating Criteria
13. Performing Arts. Examples: Acting, dancing, singing, playing musical instruments, public speaking, composing, etc.	--- Considering all of the student's performing arts activities, assign the ratings of this dimension as follows: 5 - Student has performed for audiences around the state or country or has received state or national recognition for performances. 4 - Student has performed with a school or local group for the public and has received special school or local recognition or awards for performances; student evidences heavy time commitment to such activities. 3 - Student is involved in two or more organized groups and spends 10 - 15 hours per week in performing arts activities. 2 - Student is involved in two or or more activities and spends 5 - 10 hours per week in performing arts activities. 1 - Student is involved in at least one performing arts activity.

Talent Dimension	Rating Criteria
14. Other. Examples: Rock collecting, being creative, being friendly, farming skills, animal breeding and care, yoga, cosmetology, T. M., etc. Note: "Other" activities are those activities which cannot be logically assigned to any of the other eight talent dimensions identified on the talent inventory.	--- Considering all of the student's "other" activities, assign the ratings of this dimension as follows: 5 - Student has won state or national recognition for the activity. 4 - Student has won school or local recognition for the activity and either holds an office in an organized group or evidences heavy time commitment to the activity. 3 - Student is involved in one or more "other" activities and either holds an office in an organized group or spends more than 10 hours per week in the activity (activities). 2 - Student is involved in one or more activities and spends 5 - 10 hours per week in the activity (activities). 1 - Student is involved in one or more "other" activities and spends less than 5 hours per week in the activity (activities).

Talent Dimension	Rating Criteria
Aspirational Level.	
Educational Aspiration.	--- Considering the student's response to Part II, Question 1, of the Talent Inventory, assign the rating of this dimension as follows: 5 - Student has selected Response A. 4 - Student has selected Response B. 3 - Student has selected Response C. 2 - Student has selected Responses D, E, or F. 1 - Student has selected Responses G or H.
Career Aspiration.	--- Considering the student's response to Part II, Question 3, of the Talent Inventory, assign the rating of this dimension as follows: 5 - Student has selected Response H. 4 - Student has selected Response A. 3 - Student has selected Response G. 2 - Student has selected Response D. 1 - Student has selected Responses E, C, or B. * - Student has selected Response F.

APPENDIX B

Table 1

Distribution of Ratings by Talent Dimensions in Percentages (Parochial I)

Talent Dimension	N	Talent Inventory					Missing
		1	2	3	4	5	
General Aptitude	1				100.0		66
Differ. Aptitude	67	0	0	10.4	31.3	58.2	0
Achieve. Eng.	58	1.7	0	17.2	37.9	43.1	9
Achieve. Math	58	1.7	0	12.1	36.2	50.0	9
Achieve. Sci.	1			100.0			66
Eng. Grades	67	1.5	6.0	29.9	37.3	25.4	0
Math Grades	67	0	7.5	10.4	31.3	50.7	0
Sci. Grades	66	0	13.6	21.2	40.9	24.2	1
Leadership	26	50.0	34.6	11.5	3.8	0	41
Home Related	52	57.7	30.8	9.6	1.9	0	15
Athletics	57	40.4	28.1	24.6	7.0	0	10
Community	63	49.2	33.3	12.7	4.8	0	4
Employment	51	43.1	35.3	11.8	9.8	0	16
Literary	28	85.7	7.1	7.1	0	0	39
Visual Arts	33	72.7	15.2	6.1	6.1	0	34
Co-Curricular	27	66.7	25.9	0	7.4	0	40
Performing Arts	36	52.8	30.6	5.6	8.3	2.8	31

APPENDIX B

Table 2

Distribution of Ratings by Talent Dimensions in Percentages (Parochial II)

Talent Dimension	N	Talent Inventory					Missing
		1	2	3	4	5	
General Aptitude	6	0	0	0	83.3	16.7	33
Differ. Aptitude	28	0	0	14.3	71.4	14.3	11
Achieve. Eng.	34	2.9	11.8	41.2	29.4	14.7	5
Achieve. Math	34	0	42.9	18.5	7.5	8.2	5
Achieve. Sci.	1	100.0	0	0	0	0	38
Eng. Grades	39	10.3	38.5	25.6	17.9	7.7	0
Math Grades	38	7.9	39.5	23.7	23.7	5.3	1
Sci. Grades	2	0	100.0	0	0	0	37
Leadership	15	20.0	46.7	13.3	20.0	0	24
Home Related	24	50.0	45.8	0	4.2	0	15
Athletics	26	34.6	26.9	34.6	3.8	0	13
Community	23	52.2	21.7	17.4	8.7	0	16
Employment	27	25.9	33.3	22.2	7.4	11.1	12
Literary	18	72.2	5.6	16.7	5.6	0	21
Visual Arts	20	55.0	30.0	5.0	5.0	5.0	19
Co-Curricular	28	67.9	17.9	10.7	3.6	0	11
Performing Arts	18	38.9	33.3	11.1	11.1	5.6	21

APPENDIX B

Table 3

Distribution of Ratings by Talent Dimensions
in Percentages (Private I)

Talent Dimension	N	Talent Inventory					Missing
		1	2	3	4	5	
General Aptitude	22	0	0	4.5	50.0	45.5	0
Differ. Aptitude	16	12.5	0	43.8	25.0	18.8	6
Achieve. Eng.	22	0	4.5	27.3	9.1	59.1	0
Achieve. Math	22	4.5	0	31.8	13.6	50.0	0
Achieve. Sci.	0						22
Eng. Grades	22	0	4.5	22.7	36.4	36.4	0
Math Grades	22	13.6	0	27.3	13.6	45.5	0
Sci. Grades	21	14.3	9.5	23.8	19.0	33.3	1
Leadership	13	30.8	38.5	23.1	7.7	0	9
Home Related	17	52.9	29.4	17.6	0	0	5
Athletics	20	5.0	35.0	30.0	25.0	5.0	2
Community	16	56.3	37.5	6.3	0	0	6
Employment	20	40.0	20.0	10.0	25.0	5.0	2
Literary	20	55.0	25.0	20.0	0	0	2
Visual Arts	13	38.5	30.8	30.8	0	0	9
Co-Curricular	20	50.0	15.0	15.0	15.0	5.0	2
Performing Arts	17	47.1	23.5	17.6	5.9	5.9	5

APPENDIX B

Table 4

Distribution of Ratings by Talent Dimensions
in Percentages (Private II)

Talent Dimension	N	Talent Inventory					Missing
		1	2	3	4	5	
General Aptitude	14	0	0	14.3	57.1	28.6	0
Differ. Aptitude	11	0	0	0	9.1	90.9	3
Achieve. Eng.	14	0	0	21.4	28.6	50.0	0
Achieve. Math	14	0	0	35.7	21.4	42.9	0
Achieve. Sci.							14
Eng. Grades	14	0	28.6	14.3	14.3	42.9	0
Math Grades	14	14.3	7.1	35.7	7.1	35.7	0
Sci. Grades	13	7.7	23.1	15.4	7.7	46.2	1
Leadership	4	0	50.0	50.0	0	0	10
Home Related	6	33.3	33.3	16.7	16.7	0	8
Athletics	13	23.1	15.4	23.1	30.8	7.7	1
Community	8	62.5	37.5	0	0	0	6
Employment	10	60.0	30.0	10.0	0	0	4
Literary	5	60.0	40.0	0	0	0	9
Visual Arts	8	62.5	25.0	0	12.5	0	6
Co-Curricular	5	60.0	0	20.0	20.0	0	9
Performing Arts	10	30.0	20.0	50.0	0	0	4

APPENDIX B

Table 5

Distribution of Ratings by Talent Dimensions in Percentages (Public I)

Talent Dimension	N	Talent Inventory					Missing
		1	2	3	4	5	
General Aptitude	3	0	0	33.3	66.7	0	79
Differ. Aptitude	73	0	0	13.7	23.3	63.0	9
Achieve. Eng.	79	0	1.3	6.3	15.2	77.2	3
Achieve. Math	79	0	1.3	8.9	17.7	72.2	3
Achieve. Sci.	75	0	1.3	12.0	44.0	42.7	7
Eng. Grades	82	2.4	4.9	35.4	0	57.3	0
Math Grades	82	2.4	19.5	41.5	1.2	35.4	0
Sci. Grades	60	3.3	1.7	40.0	1.7	53.3	22
Leadership	21	42.9	38.1	9.5	9.5	0	61
Home Related	44	65.9	29.5	2.3	2.3	0	38
Athletics	56	39.3	39.3	17.9	3.6	0	26
Community	43	46.5	39.5	9.3	2.3	2.3	39
Employment	48	33.3	45.8	18.8	2.1	0	34
Literary	20	75.0	15.0	10.0	0	0	62
Visual Arts	38	57.9	21.1	10.5	10.5	0	44
Co-Curricular	24	70.8	25.0	4.2	0	0	58
Performing Arts	44	31.8	27.3	27.3	9.1	4.5	38

APPENDIX B

Table 6

Distribution of Ratings by Talent Dimensions in Percentages (Public II)

Talent Dimension	N	Talent Inventory					Missing
		1	2	3	4	5	
General Aptitude	81	0	2.5	19.8	64.2	13.6	13
Differ. Aptitude	3	0	0	0	33.3	66.7	91
Achieve. Eng.	91	0	0	18.7	31.9	49.5	3
Achieve. Math	91	2.2	7.7	19.8	36.3	34.1	3
Achieve. Sci.	80	2.5	17.5	25.0	25.0	30.0	14
Eng. Grades	94	1.1	16.0	27.7	12.8	42.6	0
Math Grades	94	6.4	23.4	28.7	11.7	29.8	0
Sci. Grades	91	6.6	24.2	24.2	22.0	23.1	3
Leadership	29	34.5	34.5	13.8	13.8	3.4	65
Home Related	48	75.0	14.6	4.2	6.3	0	46
Athletics	65	30.8	26.2	30.8	10.8	1.5	29
Community	50	50.0	28.0	10.0	8.0	4.0	44
Employment	67	55.2	34.3	7.5	3.0	0	27
Literary	38	55.3	18.4	7.9	10.5	7.9	56
Visual Arts	41	51.2	12.2	17.1	19.5	0	53
Co-Curricular	42	73.8	11.9	7.1	2.4	4.8	52
Performing Arts	71	23.9	18.3	22.5	26.8	8.5	23

APPENDIX C

Summary of Demographic Differences Among Schools

Demographic Variables	Parochial I	Parochial II	Private I	Private II	Public I	Public II	F Statistic
Father's Occupational Level	3.61	4.75	1.50	1.45	2.76	1.73	28.27***
Mother's Occupational Level	5.70	6.22	6.55	7.17	4.60	4.54	6.52***
Father's Educational Status	4.07	3.63	6.45	6.50	5.59	6.28	27.81***
Mother's Educational Status	3.79	3.41	5.95	5.36	5.18	5.60	25.64***

*** $P < .001$

APPENDIX D

Inter-Rater Reliability for FOS Scoring

FOS Cue	% Agreement	
Cue 1: (First in Medical School Class)	86.77	.75
Cue 2: (Child Psychology-Graduate School)	90.38	.78
Cue 3: (Achieved what she wanted)	91.50	.79
Grand Total	89.56	.76

APPENDIX E

Problems Checklist

These are some problems that have been encountered by some persons in achieving their educational/occupational goals. Do you expect that any of these will apply to you? (Please check as many of the following as apply.)

___ Lack of money.

___ Insufficient education.

___ Being a woman.

___ Family responsibilities.

___ Poor health status.

___ Tough competition.

___ Being white.

___ Being non-white.

___ Being from "the wrong side of the tracks."

___ Lack of talent.

___ Not sufficiently outgoing.

___ Job market.

___ Other (what?)_____

___ None.

APPENDIX F

Sex Discrimination Checklist

Some women report that they have encountered special problems in fulfilling their goals. Do you anticipate any of the following career problems based upon your sex? (Please check as many as apply.)

___ Low pay.

___ Managing family and home responsibilities and career.

___ Breaking into a formerly all male occupation.

___ Restricted social life.

___ Inability to move up the job ladder.

___ Competition from men.

___ Loss of femininity.

___ Resistance to a career from family member.

___ Competition from other women.

___ Not any.